

CITY OF CHINO HILLS

GENERAL PLAN

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September 13, 1994

City of Chino Hills General Plan

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Ed Graham
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General Plan Advisory Committee

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Consultants to the City

Cotton/Beland/Associates, Inc. with

Barton-Aschman Associates
Leighton & Associates
Tischler & Associates
Gast and Hillmer

Transportation
Geotechnical/Safety
Economic Development
Urban Design

Adopted: September 13, 1994

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Chino Hills General Plan:
Topics Discussed by General Plan Element

Chino Hills General Plan Element and California Government Code Section References*	Topics Discussed in Element
Land Use Element - Government Code Section 65302(a)	General distribution and intensity of land uses for housing, commercial uses, institutional uses, public facilities, and open space. Urban design is also discussed in this element. Discusses interrelated issues included in other elements.
Circulation Element - Government Code Section 65302(b)	Closely coordinated with the Land Use Element to identify the general location and extent of existing and proposed major roadways, transportation routes, and public transportation. Also addresses congestion management requirements pursuant to Government Code Section 65088 et seq.
Housing Element - Government Code Section 65583	Comprehensive assessment of current and projected housing needs for all segments of the community and all economic groups. Identifies developmental constraints, and includes policies and action programs for providing adequate housing.
Conservation, Public Services/Facilities Element - Government Code Section 65302(d) and 65302(b)	Identification and appropriate conservation of natural resources, including scenic vistas, trees, hillsides, and biological resources. Also addresses air quality, water conservation, solid waste reduction and recycling, agricultural land, mineral resources, and cultural resources. Also included is identification and policies addressing public services, including police and fire, and utilities.
Open Space and Recreation Element - Government Code Section 65302(e)	Closely related to the Conservation Element, but focused on the City's Parks, Recreation, and Open Space Master Plan. Management of open space areas, including areas left undeveloped for public health and safety reasons, as well as areas designated for active and passive recreation and trails
Safety Element - Government Code Section 65302(g)	Policies and programs to protect the residents, businesses, and City from potential risks from earthquakes, geologic hazards, floods, fires, and hazardous materials. Includes strategies for emergency response and action, and geologic hazard mitigation.
Noise Element - Government Code Section 65302(f)	Evaluation of noise sources and their relation to land use policy. Measures current noise levels, projects future noise levels, identifies compatibility of noise levels with land uses.
Economic Development Element - Optional Element as discussed in Government Code Section 65303	Identification of key economic and fiscal opportunities for the City, including policies and programs for achieving economic goals. Relates potential economic development to land use policy.

* Several important topics are related to more than one General Plan element. Examples include flooding, energy and water conservation, and utilities. The California Government Code and the State of California General Plan Guidelines recognize the difficulty in assigning such closely related issues to separate General Plan "elements." For the Chino Hills General Plan, the City has grouped issues as they relate to the unique characteristics of Chino Hills. Appropriate summaries and cross-references are included throughout the General Plan.

Citizen groups and individuals participated in preparation of the General Plan through attendance at General Plan Advisory Committee meetings and at General Plan public study sessions and public hearings. This document is based upon consensus identification of community goals and policies.

Finally, the Draft General Plan and its supporting documents received extensive review at public hearings held before the City of Chino Hills Planning Commission and City Council. Public testimony concerning the Draft General Plan was received prior to Plan adoption.

Organization of the General Plan

The General Plan consists of separate elements which together satisfy the content requirements of State general plan law (see Table 1). The organization of the General Plan is described in Figure I-1.

A number of documents support the General Plan, but are not adopted as parts of the Plan. The General Plan *Environmental Impact Report (EIR)* and various background technical documents are examples.

The eight General Plan elements and the Land Use Policy Map clearly state the goals and policies for the long-term development of the City. Each element is comprised of three parts. The first part is an introduction to the element. An overview of issue areas is presented in the second part. The third part presents respective goals, objectives, and policies. In most elements, a fourth section details plans for implementing policies.

Amendment of the General Plan

Recognizing the dynamic nature of the General Plan, State law provides for periodic review of the document to ensure that it is consistent with the conditions, values, expectations, and needs of the community. The General Plan Guidelines state:

"The General Plan is a dynamic document because it is based on community values and an understanding of existing and projected conditions and needs, all of which continually

change. Local governments should plan for change by establishing formal procedures for regularly monitoring, reviewing, and amending the General Plan."

The General Plan will be amended from time to time as City objectives become more defined or shift, or as State law dictates. In addition, periodic revision of the Housing Element to reflect housing need numbers extrapolated for Chino Hills is required.

The primary objective of the Plan - to establish a vision for the future City - will continue to shape citywide policies and programs into the twenty-first century.

The Chino Hills Specific Plan and Development Code

The Chino Hills Specific Plan continues, as it has since 1982, to be the primary land use policy document for the 27-square mile Specific Plan area. There is a separate "Chino Hills Specific Plan" category within the General Plan and shown on the General Plan Land Use Policy map. The Specific Plan contains a land use policy map which presents parcel specific land use policy within the Specific Plan area.

The Development Code is the primary implementation tool for both the General Plan and the Chino Hills Specific Plan. At the time the City's first General Plan was prepared, a major revision was made to the Specific Plan which included separating all regulatory language from the Specific Plan and incorporating this language into the City's Development Code. This was done to facilitate the review of development projects by having all regulatory provisions in a single document.

The relationship between the General Plan, the Specific Plan, the Development Code, environmental documentation, and review documents is illustrated on Figure I-2.

Glossary

A glossary of planning and technical terms is included as Appendix B.

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Introduction

Preface - A Vision For The City of Chino Hills

The General Plan for Chino Hills envisions a vision for the future of the community. Through careful planning, thoughtful strategies, and thoughtful actions, Chino Hills can achieve a vision of a strong, vibrant, and successful future for the community's future. The vision of the future, as expressed in the General Plan, is a vision of a strong, vibrant, and successful future, one that is a vision of a strong, vibrant, and successful future, one that is a vision of a strong, vibrant, and successful future.

The General Plan is based on the community's vision for the future. The General Plan reflects the vision and provides the framework for the city of the future reflects the vision of the future of the city. In the future, the General Plan is a "vision of the future." It is a vision of the future, the city of the future, the city of the future, the city of the future.

Chino Hills is a vibrant community with a rich history and a bright future. The city of Chino Hills is a vibrant community with a rich history and a bright future. The city of Chino Hills is a vibrant community with a rich history and a bright future. The city of Chino Hills is a vibrant community with a rich history and a bright future.

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Public Comments

Comments on the General Plan for the City of Chino Hills are invited. Comments on the General Plan for the City of Chino Hills are invited. Comments on the General Plan for the City of Chino Hills are invited. Comments on the General Plan for the City of Chino Hills are invited.

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Introduction

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Introduction

Preface - A Vision For The City of Chino Hills

The General Plan for Chino Hills provides a vision for the future of the community. Through mail and telephone surveys, community meetings, workshops, individual meetings, letters, and public hearings, Chino Hills' citizens have expressed a strong, clear and consistent vision for the community's future physical development. The pursuit of this vision, as expressed in the General Plan's goals, objectives, and policies, will provide and maintain the quality of life for the residents of Chino Hills.

This General Plan is based on the community's vision for the future. The General Plan reflects the vision and provides the means to ensure that the city of the future reflects the vision of the citizens of today. In this sense, the General Plan is a "guidebook to the future." It is, quite simply, the single most important document in the city.

Citizens are excited about the potential for their City to take its place among Southern California's cities as a trend-setting, master-planned community. Chino Hills residents are aggressive and vocal about the attributes which create a high quality of life for themselves and their children.

THE VISION—The Chino Hills of the future is envisioned by the residents to continue to reflect the attributes which brought them to the community: high quality residential and commercial areas in a rural setting, a high level of public services provided by the City of Chino Hills, and a pleasing environment in which to live and work. The future will also provide more of the amenities citizens desire, but which the City of 1993 does not fully provide: more local shopping and employment opportunities, and an increased tax base to support City government and the services it provides.

Rural Character

Foremost in the citizens' vision is the preservation of the rural character of Chino Hills. In the context of Chino Hills, "rural character" is provided by a sense of openness and a sense of living in a community which retains reminders of its agricultural roots as a ranching area for cattle, horses, and sheep. These rural attributes are preserved primarily through an extensive system of publicly owned open space lands—including the hills which provide a backdrop to the community's residential and commercial areas. The preservation of hill-sides, ridgelines, and open space lands was an important part of the Chino Hills Specific Plan which guided the community's early growth, and is continued in the goals and policies of this General Plan.

In the southern portion of the city, where open range ranching still takes place, large areas of open space will also be preserved, both to maintain the citizens' desire for rural character, and to respect the location in this area of the Chino Hills State Park and (just outside the city) Prado Basin, two natural open space areas of statewide importance.

THE VISION—The Chino Hills of the future is a community in which open spaces continue to provide an important part of the city. Ranches are envisioned to remain in operation. Open spaces are envisioned as continuing to provide a scenic backdrop, where cattle, horses, and sheep continue to graze within view of the city's streets and neighborhoods, and where reminders of the area's past and its natural history are available to all residents. In the Chino Hills of the future, open spaces are envisioned as taking on even greater importance, as the Chino Hills State Park assumes its proper place among the state parks as a major recreation destination for

equestrians, hikers, bicyclists, and lovers of nature.

Outdoor Recreation Access

Many Chino Hills residents are avid enthusiasts of outdoor recreation, and the city's location adjacent to several major open space areas provides ample opportunities to enjoy the region's natural qualities. Many residents enjoy walking and hiking, while others prefer bicycling, horseback riding, and organized sports. And many residents enjoy the quiet and passive experience of sitting in one of the community's many parks.

THE VISION—As Chino Hills grows, opportunities to enjoy outdoor recreation are envisioned to increase. More trails and parks are envisioned, opening more of the community's open space areas for enjoyment by the public. The vision for Chino Hills also is for more parks and sports fields, to provide opportunity for organized play to a greater number of persons. In the southern portion of the city, recreational use of Chino Hills State Park is envisioned to increase substantially in the future (within the limits the Park can support), providing not only new recreational opportunities but also new entrepreneurial opportunities for businesses to serve park visitors.

High Quality of Public Services

Essential to a high quality of life are the services provided by local government: police, fire protection, and schools. In Chino Hills, police protection is provided by the San Bernardino County Sheriff's Department, under contract to the City. Fire protection is provided by the Chino Valley Independent Fire District, an independent agency. Education is provided by the Chino Unified School District, which enjoys a reputation for high academic quality and which is continuing to add new schools to serve the growing population of school-aged children.

In addition to these items, the City also offers a wide variety of essential services which add to the quality: roads, water service, planning, maintenance of public parkways, public parks, recreation, and many others.

THE VISION—The Chino Hills of the future remains a place in which residents expect—and receive—a high level of public services. Where necessary to meet the needs of an expanding population, the level of public services also expands. Because the population will continue to change and grow, public services are envisioned to be adjusted to meet new conditions, and to expand as needed to serve a larger population.

Diversified Economic Base

Inextricably linked to the provision of a high level of public services (discussed above) is the need to increase City revenues. For Chino Hills, this translates into the need to provide a diversified economic base which will bring a diversity of tax revenues to the City, shielding the City budget from extreme variation in any one type of revenue (as has occurred in recent years with property tax revenue). Citizens in Chino Hills have urged the City to attract high quality retail stores, service providers, and restaurants and entertainment uses to provide a full range of retail services within the city. Citizens clearly desire to be able to find goods and services in Chino Hills. Many also want to be able to work within the city, a goal which is currently achieved by only one tenth of residents. In order to help increase the number of jobs in the city, the areas originally designated by the Chino Hills Specific Plan for commercial and business development need to be expanded.

THE VISION—The Chino Hills of the future is envisioned to contain a diversity of retail uses, building on the stores and service providers in existence at the time of the preparation of the City's first General Plan. New

commercial areas will provide many opportunities for Chino Hills residents to shop, eat, and entertain within the city, allowing them to enjoy a full range of services without traveling to other cities and bringing increased tax revenues to City government (funding a wider range of public services). In the Chino Hills of the future, many more residents will live and work within the City. New office and other commercial developments provide an opportunity for workers at all levels to find work within Chino Hills. An increasing number of workers are envisioned to be able to avoid commuting to other cities, helping decrease traffic and decrease air pollution.

Older and Special Areas In Chino Hills

The older and "special" neighborhoods—Los Serranos, Canon Lane, Sleepy Hollow, and English Road—are recognized as an important part of the community, containing its most mature residential areas and some of the City's most cohesive neighborhoods. These areas need to be preserved and given special attention as regards their need for improved services and public facilities (such as sewer service, storm drainage, and additional water service for improved fire flow in the case of Los Serranos, Canon Lane, and Sleepy Hollow) and their need to be protected from development which would end their existence (such as is the case in the English Road area).

THE VISION—Older and special neighborhoods are envisioned to retain their unique character as the city continues to grow. Problems in these areas which existed at the time of the General Plan's preparation (such as lack of sewer service in Sleepy Hollow and recurrent flooding in Los Serranos) will be corrected, and housing rehabilitation will be pursued to ensure that all homes in these areas are safe and sound. In the English Road area, equestrian ranches are envisioned as a continuing, viable land use, protected

from development with appropriate land use policies.

Managed Growth

A major concern of citizens expressed through the General Plan preparation process was a desire to manage growth in the city. The citizens expressed a desire for continued growth which could be managed so that the desirable aspects of Chino Hills—its rural character—are not affected. "Grow, but don't grow too fast," said the citizens. Related to this is a concern that the City's current structure of fees and assessments places it at a disadvantage with neighboring cities, in which a developer may pay substantially lower fees.

THE VISION—The future envisioned in this General Plan is one in which the City carefully manages the growth of new residential and commercial areas in the City—to the extent possible—by directing growth to those areas where new development can be supported, and where it is appropriate, and where it does not add to traffic congestion or other problems. Land use and economic development policies will play a key role in achieving this vision, by directing growth to appropriate areas and by directing economic development efforts. This vision also includes a future in which development fees are reduced as much as possible to make Chino Hills more attractive to developers of commercial and business park projects.

Traffic/Circulation

Traffic congestion is a major concern of many (if not all) Chino Hills residents. It is also one of the City's most intractable problems. Due in large part to the city's location, which places it at a crossroads in the region, roadways are often congested, and residents and commuters must often endure long waits at traffic signals. When any one of the major routes through the city is closed, traffic on the remaining routes becomes even worse.

Residents recognize that new roadways are needed to help solve the city's traffic problems, but they also realize that some potential solutions carry with them their own problems. Building a new roadway in Soquel Canyon to carry traffic to Orange County would solve many traffic problems, but is vastly expensive and currently not funded, environmentally damaging, and has been determined by the City to be infeasible. Widening Carbon Canyon Road would harm the canyon's unique character and significantly damage the neighborhood of Sleepy Hollow. Others may be feasible, such as the construction of a new roadway in Tonner Canyon to connect with the 57 Freeway and the extension of Eucalyptus Avenue to Tonner Canyon.

Residents also recognize that Chino Hills should not place itself in the role of solving regional problems unilaterally. If traffic problems are caused by commuters from other cities, or by an imbalance of jobs and housing in the region, then the solution to these problems should come from the region.

***THE VISION**—The vision for future traffic congestion in Chino Hills is that the City will "hold the line" keeping traffic at manageable levels. This vision, however, recognizes that not all traffic problems can be solved; some congestion may continue because the solution to congestion may be worse than the problem it solves. Part of this vision is the retention of the unique "switchbacks" on Carbon Canyon Road.*

*The vision for **Tonner Canyon Road** is that this route will be constructed within the planning period (1993-2013) to provide a new link to Orange County and the 57 Freeway. The City*

*will seek to have this roadway funded primarily from State or regional sources. The vision for **Soquel Canyon Parkway** is that this roadway is not feasible, and will not be shown as a future through roadway on the City's long-range plans.*

The future will bring the completion of Route 71 as a full freeway, improving north-south traffic flow on that important roadway. The vision for future transportation also includes an increase in the use of "alternative modes": buses, carpooling, bicycles, and walking.

Community Identity

Chino Hills is a city comprised of a diversity of neighborhoods, from the quaint cottages of Sleepy Hollow to the hilltop homes of Rolling Ridge. Indeed, the diversity of neighborhoods was enforced through the Chino Hills Specific Plan, which established a system of eight semi-self-contained "villages" (not including the Butterfield Ranch project, a "village" of its own). With cityhood came a new "identity" for the area: the City of Chino Hills.

***THE VISION**—The vision for the future is that the identity of Chino Hills as a cohesive community will be stressed in decisions and policies. The City will seek to establish a system of identity markers at the major entrances to Chino Hills, building a recognition of the city among residents and other travelers. The "villages" created by the Specific Plan will continue to function as community planning areas, but the City will recognize and strengthen those neighborhood identities which have been historically used by residents.*



Introduction - the City of Chino Hills General Plan

While rapid growth has been the normal condition in Southern California for many years, the urban growth in the Chino Hills area of San Bernardino County between 1980 and 1990 was explosive. During this 10-year period, the area's population increased from 14,000 to 35,000. In December 1991, the Chino Hills area incorporated as the City of Chino Hills. Growth continued; as of March 1993, the population was approximately 48,000, an increase from 1980 of 243%.

The Chino Hills area, located at the junction of four counties (Orange, Riverside, Los Angeles, and San Bernardino) was at the "front-line" of expanding development. During the 1980s, with limited housing sites remaining in Los Angeles and Orange counties, development pressure was especially strong.

Agricultural and dairy areas east of Chino Hills were especially prone to development since they are flat and in proximity to several freeways. In an effort to maintain these areas in agricultural use, an agricultural preserve was established and County Planners looked to the adjacent Chino Hills as an area to focus development.

County officials recognized that the hilly, rural ambiance of Chino Hills warranted special planning consideration. A 27-square-mile Specific Plan to guide development was adopted in 1982.

Before long, the people of Chino Hills, both new arrivals and longtime residents, began to consider local control of what had become a distinct community. The result was incorporation as a City in 1991. One of the first tasks of the new City was to begin work on a General Plan. This document, along with a completely reformatted Specific Plan, establishes the planning policy for Chino Hills.

The Chino Hills Sphere of Influence

The "Sphere of Influence" is the probable ultimate physical boundaries and service area of the City as determined by the San Bernardino County Local Agency Formation Committee (LAFCO). LAFCO has defined the Chino Hills Sphere of Influence as being contiguous with the City's corporate boundaries. While the City has no jurisdiction over the determination of land use policy in adjacent areas, it can advise the County on land use policy. A discussion of possible additions to the City's Sphere of Influence and the relationship of the City to surrounding jurisdictions is contained in the Land Use Element of the General Plan. Expansion of the Sphere of Influence requires the cooperation and approval of LAFCO.

Role of the General Plan

The General Plan is a broad framework for planning the future of the City of Chino Hills. It is the official policy statement of the City Council to guide the private and public development of the City in a manner to gain the maximum social and economic benefit to the citizens. All other City codes and standards, including the Chino Hills Specific Plan and Development Code, must be consistent with the General Plan. Although this General Plan is expected to guide development until the year 2013 (a 20-year timeframe), changes to the Plan are permitted and anticipated as circumstances change locally, regionally, and nationally. The flexibility of the General Plan results in a dynamic and practical tool for shaping the City according to the overall "Vision Statement" presented in the Preface to this document.

The California Government Code (Section 65302) requires that a general plan contain seven elements (chapters): 1) Land Use, 2)

Circulation, 3) Housing, 4) Conservation, 5) Open Space, 6) Noise, and 7) Safety. In addition to the required elements, State law allows optional elements which address specific issue areas within a jurisdiction. The Chino Hills General Plan consists of an integrated and internally consistent set of goals, objectives, and policies that address a number of issues including land use, circulation, housing, community design, parks and recreation, economic development, public facilities, conservation, open space, public safety, seismic safety, scenic highways, noise, and air quality. These issue areas are discussed within the seven required elements and an Economic Development Element.

The basis of the Plan is land use and the need to plan for future development. The Plan's structure ensures compliance with State law regarding General Plan consistency. Moreover, it establishes a comprehensive document which can improve coordination of community development activities. This Plan is an internally consistent document which provides a comprehensive data base and set of projections. The City of Chino Hills is an ever-changing dynamic entity. Periodic review and possible amendment of the General Plan to adjust to changing conditions and City priorities is required. Table I-1 lists the topics covered in each General Plan element.

Under State law, City ordinances regulating land use must be consistent with the General Plan. The Development Code, the Chino Hills Specific Plan, and individual project plan proposals must be consistent with the goals, policies, and standards contained in the General Plan. In addition, all capital improvements and public works projects must also be consistent with the General Plan.

Use of the Plan

The General Plan is used by the following:

- City Council in decision making activities;
- City staff in development programs and projects;

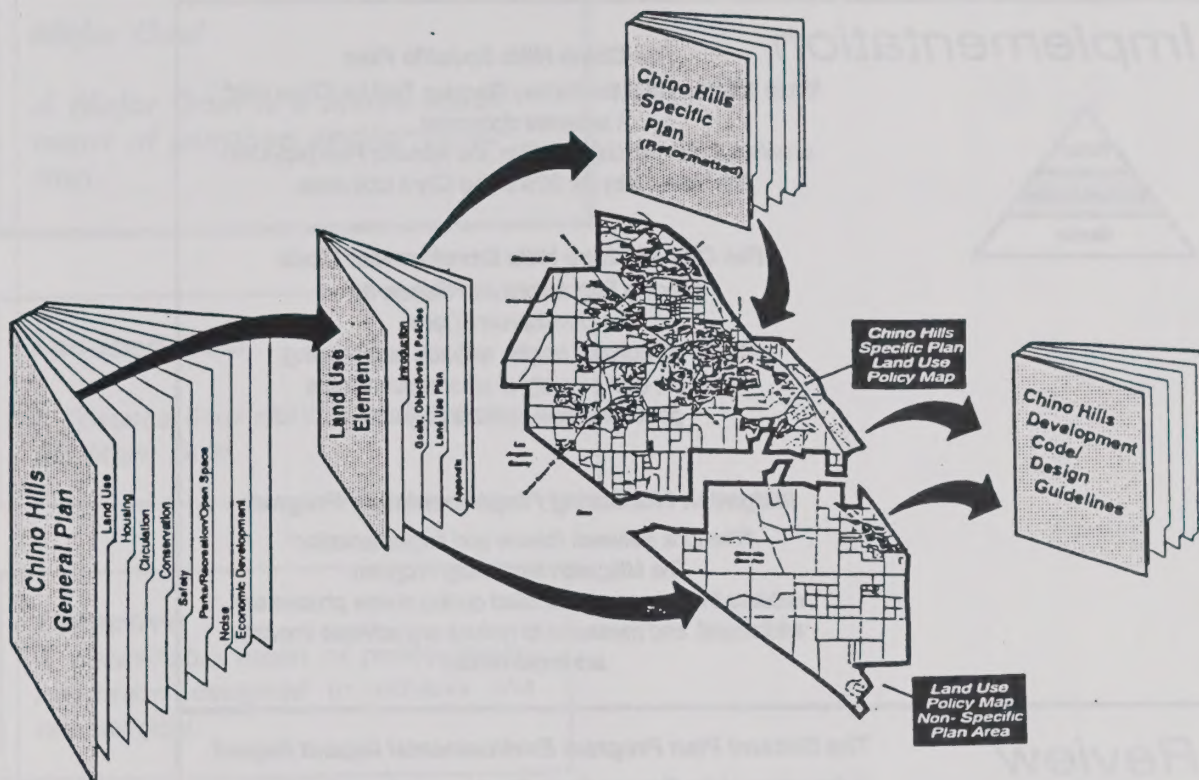
- Development community in preparing development proposals; and
- Citizens understanding the parameters of growth.

Preparation of the Plan

Citizen participation played an important role in preparing the Chino Hills General Plan. Because the General Plan needs to reflect community goals and aspirations, citizens were involved with issues identification and goal formulation. The public and various civic and professional organizations were consulted during the Plan preparation stage whenever possible. Numerous public meetings were held to discuss the Plan, and additional public involvement occurred during the public hearing process.

At the start of the General Plan program in 1993, a questionnaire was distributed to all 16,000 city households and businesses to provide an assessment of community attitudes and concerns. The results of the questionnaire provided information on the relative significance of specific planning issues in Chino Hills, and helped in the formulation of General Plan goals, policies and programs to address these issues. An abbreviated summary of the survey is provided in Appendix A, grouped by question topic. A more complete analysis of survey results is published in the report "1993 Chino Hills General Plan questionnaire available for review in the City Planning Department.

The General Plan Advisory Committee (GPAC) played a key role in providing advice to the City's General Plan consultant and City staff regarding the content of the General Plan. The GPAC consisted of 33 members, including representatives from the City Council, the Planning Commission, Parks Commission, Public Works Commission and various neighborhoods and community organizations. The GPAC assisted in the identification and refinement of planning issues, and in the development of a preferred land use policy map. The GPAC also reviewed drafts of all General Plan work products, and served as a liaison with community organizations and individuals.



SOURCE: Cotton/Beland/Associates, Inc.

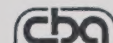


Figure I-1
Organization of the
General Plan

Policy



The General Plan

"A Vision of the Future – A Constitution for Development"
The General Plan looks
at the 'big' picture - it's the City's principal definition of
land use policy.

Implementation



The Chino Hills Specific Plan

"From 1982 to 1993 the Primary Planning Tool for Chino Hills"
A separate document,
consistent with the General Plan, the Specific Plan provides
land use policy for 60% of the City's total area.

The City of Chino Hills Development Code

"Zoning Regulations and Standards"
The Development Code
establishes building height, setback, landscaping,
signage, and a variety of other requirements
governing development projects.

Mitigation Monitoring / Implementation Program

"The Link Between Review and Implementation"
The Mitigation Monitoring Program
ensures that concerns identified during review phases are
addressed, and measures to reduce any adverse impacts
are implemented.

Review



The General Plan Program Environmental Impact Report

"A Statement of the General Plan's Physical and Social Implications"
The Program EIR serves as a broad environmental
document that can be referenced and utilized in a
"tiered approach" for more specific projects.

General Plan Annual Review

"A Regularly Scheduled General Plan Checkup"
Every year the General Plan is reviewed by the City
and amendments made to keep it up-to-date; the
General Plan is not 'cast-in-concrete'.

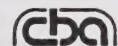


Figure I-2
Relationship Between City
Policy, Ordinances and Programs,
and Review Documents

Goals for the City of Chino Hills:

For general reference, the following definitions are used for goals, objectives, and policies.

Major Goal

A Major Goal is a broad statement of purpose and/or direction.

Focused Goal

A Focused Goal clarifies and defines the Major Goal.

Objective

A quantifiable result of policy implementation designed to achieve the related goal.

Policy

A policy describes how the goal may be achieved.

The Major Goals and Focused Goals support the Chino Hills Vision Statement and provide interconnections between the various General Plan Elements. The following table, 1-2, lists the Goals and illustrates interconnections by showing which goals are applicable to which elements. In most cases, a given goal provided direction for more than one element, eg., Goal 4-2 dealing with open space lands relates to the Open Space and Recreation Element and to the Conservation Element.

TABLE I-2
General Plan Goals and Their Relationship to Individual General Plan Elements

Major Goals	Focused Goals	General Plan Elements							
		Land Use	Circulation	Housing	Economic Development	Parks, Rec., Open Space	Safety	Noise	Conservation
Major Goal 1: Preserve Rural Character	Goal 1-1: Retention of important ridgelines and open space areas	●				●			
	Goal 1-2: Preservation of important viewsheds	●				●			
	Goal 1-3: Establishment of land use densities appropriate to their location in the City	●		●					
Major Goal 2:	Goal 2-1: A safe community free from man-made and natural hazards						●	●	
A High Quality of Life for All Residents	Goal 2-2: Outdoor recreation opportunities for all residents					●			
	Goal 2-3: A balanced and efficient transportation system		●						
	Goal 2-4: High quality public facilities and services		●						
	Goal 2-5: Excellence in urban design	●							
	Goal 2-6: Strong identity at the City and Neighborhood levels	●							
	Goal 2-7: Safe and affordable housing for all residents			●					
	Goal 2-8: Provide active and passive park facilities and recreation programs that will satisfy the basic leisure time needs of the City's residents and enhance the quality of life in Chino Hills.					●			

Table I-2
General Plan Goals and Their Relationship to Individual General Plan Elements
(Continued)

Major Goals	Focused Goals	General Plan Elements							
		Land Use	Circulation	Housing	Economic Development	Parks, Rec., Open Space	Safety	Noise	Conservation
Major Goal 2: (Continued)	Goal 2-9: Develop a network of multi-use trails that safely connects neighborhood recreation sites, adjacent communities and the State Park, and areas of scenic interest within the City.					●			
	Goal 2-10: Provide a wide variety of recreation programs that meet the diverse needs of the community and contribute to the physical and mental health of the population.					●			
	Goal 2-11: Continue to seek community input and community support on development of park and recreation programs.					●			
	Goal 2-12: Create a strong community image for Chino Hills using the parks in the City.	●				●			
Major Goal 3: Diversified Economic Base	Goal 3-1: Commercial and service uses targeted to serve Chino Hills residents and shoppers from other cities	●			●				
	Goal 3-2: Increased opportunities to live and work in Chino Hills	●			●				
Major Goal 4: Protection of the Natural Environment	Goal 4-1: Development which relates to environmental constraints	●							●
	Goal 4-2: Open space lands which maintain environmental integrity and function as self-supporting, natural ecosystems					●			●

Table I-2
General Plan Goals and Their Relationship to Individual General Plan Elements
 (Continued)

Major Goals	Focused Goals	General Plan Elements							
		Land Use	Circulation	Housing	Economic Development	Parks, Rec., Open Space	Safety	Noise	Conservation
Major Goal 4: (Continued)	Goal 4-3: Manage the natural and ornamental landscape areas of Chino Hills by properly scheduling maintenance activities and by carefully assigning the use of resources that help keep the landscape viable and functioning.					●			●

Chapter 1 Land Use Element

A. INTRODUCTION

The Land Use Element defines the City's primary policy governing the use of land. The Land Use Policy Map, included in this Element as Figure LU-1 (see Section D), presents a graphic representation of land use types and intensity. Together the text and the map provide the foundation for land use decision making into the next century.

Purpose of the Element

Goals and policies set forth in the Land Use Element shape and reflect the policies and programs contained in the other General Plan elements. For example, the street system and circulation improvements described in the Circulation Element are designed to accommodate the intensity of use allowed by land use policy.

In addition to the primary General Plan classifications, there are three "overlay" classifications which provide land use policy guidance over one or more primary classifications. These overlays are: Planned Unit Development (PUD), Flood overlay, and Seismic Safety overlay.

The Planned Development overlay allows for creative use of vacant properties through provision of a mix of land use types and densities.

The remaining two overlay classifications; (1) Flood overlay for Chino Creek and the Prado Dam inundation area and Seismic Safety overlay for the Chino Hills fault zone in the Butterfield Ranch area, limit development potential.

The Chino Hills Specific Plan

Sixty percent of the city of Chino Hills is within the Chino Hills Specific Plan. Development within this area will continue to be governed, as it has since 1982, by the Specific

Plan. However, the 1993 General Plan program included a complete reformatting of the Specific Plan and incorporation of Specific Plan policy guidelines in the General Plan.

Chino Hills is unique in Southern California communities in having such a large portion of its corporate area within a Specific Plan. Land use categories within the Specific Plan (see Specific Plan Figure LU-2) provide basic policy guidance; however, individual PUDs must be used to determine the actual range of uses allowed on a given parcel of land, which is governed by a PUD. In most cases, the definition of uses has occurred through the use of "Planned Development" prepared by development interests in accord with the precepts of the Specific Plan. The General Plan and Specific Plan work together to provide a clear and easy to understand guide to land use.

B. LAND USE ISSUES

The citizens of Chino Hills have clearly articulated the issues addressed in the General Plan (see Appendix A, Summary of 1993 General Plan Survey), and the Land Use Element takes its direction from those concerns. The following outline summarizes the land use issues faced by the City; the upcoming section of the Element provides the goals, objectives, and policies to deal with these issues.

Rural Character

- Preservation of the sense of openness and community important to the residents
- Preservation of natural features and large undeveloped areas
- Preservation of important viewsheds
- Appropriate development in the Chino Valley Freeway corridor
- Carefully planned design and landscaping

- Large areas for both active and passive recreation

High Quality of Life

- Strong identity at the City and Neighborhood levels
- Excellence in urban design
- A safe community free from man-made and natural hazards

Diversified Economic Base

- Ability to live and work in close proximity
- Enhanced shopping, service, and social opportunities
- New businesses and employees
- Increased City revenue
- Moderate growth without jeopardizing high quality of life
- Appropriate new growth in areas where the necessary market support is available
- Managed growth integrated with diversified economic base

The Natural Environment

- Creation of open space and wildlife corridors
- Integration of existing natural features into new development
- Contour grading and site planning sensitive to landform
- Techniques to minimize impact on the natural environment

C. ASSUMPTIONS:

The type, density, and distribution of various land uses described by the General Plan are

derived from a number of basic assumptions. While many of these assumptions are expressed in the City's Vision Statement and Land Use Element Goals, Objectives, and Policies, others derive from existing physical conditions and from economic projections. The following is a listing of key assumptions:

Physical Conditions

Because much of the development in Chino Hills was less than 10 years old at the time the General Plan was prepared, many of the uses in the City can be expected to remain over the life of the General Plan (i.e., 20 years). Developed residential and commercial areas were taken as "givens". Other givens included the location of most school and park facilities and the Chino Hills State Park.

Economic Projections

The General Plan includes an Economic Development Element which contains specific recommendations to help ensure the economic viability of Chino Hills. Projections of future demand for various land uses were prepared and land use plan proposals checked against these projections. Economic projections were used as an independent "test" of the feasibility of the City realizing the land use pattern shown on the Specific Plan and General Plan Land Use Policy maps. Key projections are:

- The city's population is expected to increase by 19,400 persons, to a total of 67,000, over the next 20 years. Ultimately at buildout the City is projected to have a population in excess of 75,000 persons;
- The future residential market demand by housing unit type is estimated to be 78.5% single-family detached, 13.5% single-family attached, and 8% multi-family apartments and condominiums;
- Approximately 3,100 housing units will be absorbed between 1993 and 1998, 1,600 between 1998 and 2003, 1,200 between 2003 and 2008, and 900 units between 2008 and 2013;

- City "capture" of retail space is likely to be approximately 125 to 140 acres over the 20-year planning period;
- About 16 acres of office land are likely to be developed in the city by 1998, with a total of 181 acres absorbed by 2013; and
- An estimated 198 acres of business park uses are expected to be developed over the 20-year planning period (1994 to 2013).

Community Aspirations

The Chino Hills Vision Statement, which is the Preface to this General Plan, and the General Plan goals express several aspects of the community's vision for future development, key to which are:

- Retaining the rural character of Chino Hills in the sense of openness and living in a community which retains an extensive system of publicly owned open space lands;
- Diversifying the city's economic base through the designation of properties along the Chino Valley Freeway corridor for commercial and business park uses; and
- Recognition of the importance of the older neighborhoods in Chino Hills, especially Los Serranos, Canon Lane, Sleepy Hollow, and English Road.

Development

Considerable discussion occurred during preparation of the General Plan about development in the southern portion of the city and Tres Hermanos area. In addition, future annexations were analyzed. Based on these discussions, the City of Chino Hills realizes that:

- General Plan land use policy limits development in southern Chino Hills to homes and ranches on lots of at least 40 acres in size. Developers may have an interest to

pursue more intensive use of this area in the future.

- Development in the Tres Hermanos area is limited to a maximum of 357 homes. Developers may be interested in developing the area at a higher intensity.
- The City of Chino Hills envisions that a portion of the Chino Agricultural Preserve will be annexed to the city, if the area does not incorporate independently.

D. PRINCIPLES AND STANDARDS OF PRIVATE SECTOR DEVELOPMENT

Basic to the guidance of physical development of the private sector are a number of common sense principles and standards which should be used to help determine location of specific private land uses and promote orderly and efficient development.

Residential

The following are the basic principles of residential development in Chino Hills:

- 1-a. Locate elementary school(s) and neighborhood park(s) within neighborhoods to reduce the walking distance to school and increase safety for children.
- 1-b. Major streets should be on the perimeter of the neighborhood to improve public safety by eliminating hazards, noise, smoke, odor, and other nuisances from residential areas.
- 1-c. Collector streets should be designed to circulate traffic within the neighborhood but discourage through traffic.
- 1-d. Local streets should serve primarily to provide access to homes and other properties. Local streets should not provide through access to and from properties not on the street.

- 1-e. Sidewalks should be provided along all streets. Where possible, sidewalks should also be provided in internal green belts.
- 1-f. Multi-family housing (apartments, condominiums, or other types of housing where more than one unit is located within a single building) should be located on the edge of the neighborhood and used as buffer between commercial and single family areas. Access for multi-family housing should be to a collector street.
- 1-g. Churches and other neighborhood serving facilities be located on the perimeter of the neighborhood with access to a collector street.
- 1-h. Natural features such as streams, rock outcroppings, and unique vegetative clusters should be preserved.
- 2. Terrain suitable for housing may include a variety of level, rolling, and hillside sites, but should not include steep or irregular sites, poorly drained areas, and slopes over 30%.

Commercial

Commercial projects in Chino Hills are contained in a variety of shopping centers. There is no central business district, although the 400,000 plus square foot commercial development at the intersection of Chino Hills parkway and Pipeline Avenue forms the major concentration of commercial development in the city. There is no "strip commercial" (several shops located in a single building parallel to and oriented to the street), although a few commercial lots have direct access to streets rather than using a common driveway.

There are seven shopping centers within the City. Four centers are neighborhood serving, one is community (city-wide), and two are specialty centers. It is expected that future commercial development of the Hills will expand on existing patterns, fulfilling

neighborhood, community, regional, and specialty needs.

The following are the basic principles of commercial development which should be adhered to in Chino Hills:

Neighborhood Shopping Centers:

- 3-a. Neighborhood shopping centers should provide for sale of everyday convenience goods such as food, drugs, and personal services such as dry cleaning, laundry and hair care.
- 3-b. The gross leasable area in neighborhood shopping centers should range from 80,000 square feet to 140,000 square feet. Site sizes should range from 8 to 14 acres.
- 3-c. Neighborhood shopping centers should serve a trade area of 5,000 to 15,000 persons.
- 3-d. Neighborhood shopping centers should be located at the intersection of major streets.
- 4-d. The primary tenant in a neighborhood shopping center will generally be a supermarket, although other types of tenants may also be used to "anchor" a center.

Community Shopping Centers:

- 4-a. Community Shopping Centers may include a variety of tenants: "junior" department stores, discount stores, supermarkets, hardware, appliance, and apparel.
- 4-b. Gross leasable square footage in a community shopping center should range from 140,000 to 300,000 square feet. Site sizes should range from 14 to 30 acres.
- 4-c. A community shopping center should serve a trade area of 30,000 to 150,000 persons.

- 4-d. A community shopping center should be located at major street intersections; a location near a freeway interchange is preferred.
- 4-e. The primary tenant in a community shopping center will generally be a "junior" department store, although other types of tenants may be used to "anchor" a center.

Regional Shopping Center:

- 5-a. Regional shopping centers provide for general merchandise, apparel, and furniture.
- 5-b. Primary tenants in a regional shopping center will generally be two or more major department stores.
- 5-c. Gross leasable square footage in a regional shopping center should range from 300,000 to 1.5 million square feet. Site sizes should range from 30 to 150 acres.
- 5-d. A regional shopping center generally serves a trade area of 150,000 or more persons.
- 5-e. A regional shopping center should be located at major street intersections; a location near a freeway interchange is preferred.

Specialty Commercial Center:

- 6-a. Specialty commercial centers serve a specific function or theme, such as:
 - Auto Malls
 - Entertainment Centers (theaters, restaurants, arcades, etc.)
 - Design Center (collection of home improvement stores)
 - Auto Services (uses that provide auto repair, washing, detailing, tires, and other auto-related services)

- 6-b. Specialty commercial centers will generally be located near a freeway at or near the intersections of major streets.
- 6-c. The size of a specialty commercial center will vary, depending on the specific types of uses proposed.

Basic Standards for All Types of Commercial Centers:

- 7-a. Integrated building design.
- 7-b. Parking design which minimizes walking distance to stores.
- 7-c. Goods delivery/loading areas located away from customer circulation and view.
- 7-d. An attractive site created by adequate landscaping, tasteful signage, clear traffic control marking, and weather protection.

Industrial

Industrial/Business Parks are the preferred industrial development type for Chino Hills. It is attractive, clean, well designed, functional, and provides an asset to the City.

The following general principles apply to Industrial/Business Park development:

- 8-a. Industrial/Business (I/B) park size should be 5-500 acres, located at or near a freeway interchange. Sites should be flat or nearly so, with minimal slope. Sites may offer rail access.
- 8-b. Each I/B park should provide complete utility service: electricity, telephone service (data compatible), storm drainage, natural gas, water, and domestic sewer. Sites may provide industrial sewer ("brine line") if needed for the industrial use.
- 8-c. Each I/B park shall include a set of pre-approved restrictions enforceable on all occupants.

- 8-d. Each I/B park shall provide centralized management through the developer or a property owners/tenants association.

E. GOALS, OBJECTIVES, AND POLICIES

The overall direction for land use policy can be summarized as follows:

- Preserve the rural and natural scenic qualities which make the city of Chino Hills unique;
- Coordinate land development with the provision of necessary public services and facilities in a timely and efficient manner; and
- Develop a balanced community of mixed land uses with a strong sense of community identity.

In this section, each major goal is supplemented by more detailed "focused goals." Focused goals are followed by "objectives" which identify a timeline and, where appropriate, quantifiable standards applied to goal statement(s). The goals and objectives are achieved by implementing "policies" which in turn follow the objectives. This hierarchy of statements illustrates the process of refining a general idea into a specific action.

All of the city's Major Goals and Focused Goals are listed in the Land Use Element. While all of the Major Goals apply to the Land Use Element, some of the Focused Goals do not. In such cases, the Focused Goal is listed and a reference given to the particular element where objectives and policies relevant to the subject Focused Goal are found.

Major Goal 1

Preserve Rural Character

Focused Goal 1-1

Retention of important ridgelines and open space areas

Focused Goal 1-2

Preservation of important view sheds

Focused Goal 1-3

Establishment of Land Use Densities appropriate to their location in the city.

Objective 1-1

Retain open space areas as identified on the Land Use Policy Map to include 770 acres of Private Open Space and 3,940 acres of Public Open Space by the year 2013.

Objective 1-2

Permit development as identified on the Land Use Policy Map with a maximum citywide buildout by the year 2013 as follows: 28,363 Residential units; 914 acres of Commercial and Business Park development; and 847 acres of Institutional/Public Facility uses.

Objective 1-3

The need for continuation of the Specific Plan to guide development will lessen, as the City approaches buildout, and the Specific Plan will be supplanted completely by the General Plan by 2005.

Policy 1-1

Permit project development only in accordance with the Specific Plan and the Development Code. Implementation of this goal for individual projects will begin at the Preliminary Development Plan stage and continue to be refined throughout the development review process.

Policy 1-2

Preserve significant natural features such as ridges, knolls, and vistas, including those identified on the City of Chino Hills Visual and Scenic Resources Diagram, through special development standards and guidelines.

Policy 1-3

Retain natural drainage courses in all cases where an independent hydrologic review of a specific development project finds that such preservation of natural drainage is physically feasible and where preservation of the natural feature will not render the subject project economically inviable.

Policy 1-4

Use dedicated open space, as opposed to built barriers, as a buffer between development areas, wherever possible.

Policy 1-5

Ridgelines and natural slopes shall be dedicated to and maintained by the City; other landscaped areas shall be dedicated/maintained as provided in City policy.

Policy 1-6

Encourage the use of plantings in all areas that represent native or naturalized species.

Policy 1-7

For all future developments, require preservation of 80 percent of all native trees with trunks 4 or more inches in diameter.

Policy 1-8

Require underground utilities for all new development.

Policy 1-9

Emphasize existing rural equestrian orientation along trails and roads by encouraging theme architecture and canopy trees which complement equestrian activities.

Policy 1-10

Preserve hillsides and accompanying views in accordance with the Specific Plan and the Development Code. The development review process will ensure that individual project proposals are consistent with City policy.

Policy 1-11

Prohibit development on ridgelines and canyon slopes with gradients of 40 percent or more, and keep these areas as close as possible to their natural condition.

Policy 1-12

Ensure that new development conforms to the unique natural setting of each area and site, retaining the character of existing landforms and preserving significant native vegetation.

Policy 1-13

Determine open space requirements for new projects based on the slope of the land. Require that a percentage of required open space be left in its natural state.

Policy 1-14

Cluster residences where appropriate to minimize grading and roadway and driveway intrusion into sensitive habitat areas. Clustering is specifically encouraged in areas abutting preserved open space and Chino Hills State Park.

Policy 1-15

Require contour grading, and encourage grading techniques that simulate the varied gradi-

ents and rounded contours of natural landforms.

Policy 1-16

Design roads and driveways for hillside residential development which conform to existing topography and which minimize grading and retaining walls.

Policy 1-17

Prohibit new development from obstructing public views from arterial streets of significant open spaces or important viewsheds.

Policy 1-18

Open public views toward parks and open spaces from adjacent streets and neighborhoods, using the view areas to provide breaks in the street system and inviting pedestrian spaces. Locate these areas at prominent natural features such as ridges, knolls, or lookout points.

Policy 1-19

In conjunction with project development, contour disturbed areas that are to be retained as open space to blend with natural slopes, and revegetate the open space with native plants.

Policy 1-20

Minimize the visual impacts of development adjacent to prominent ridges through setbacks and landscaping, especially near major canyons.

Policy 1-21

Minimize the visual bulk of new hillside development with the following techniques:

- *Building envelope step-back provisions that limit the height of down-slope building walls and encourage hillside houses to step with the topography;*
- *Site designs that express the variation and irregularity of the hillside;*
- *Adequate lot widths and minimum building separations to reduce the "wall effect" of houses lined up along the contour;*

- *Shared guest parking bays between private lots to allow downhill lots to build with varied front setbacks and keep the building mass close to the existing grade; and*
- *Separate garages for houses on uphill lots as a way of reducing building bulk.*

Policy 1-22

New development shall be developed in such a way that it is not visible from the visitor center, campgrounds, parking areas, and the floors of Aliso, Telegraph, and tributary canyons within the Chino Hills State Park.

Policy 1-23

The community park shall be permitted to expand in area and use regardless of the underlying land use policy designation. Should the park site be developed for a non-park use, the park will be relocated in conjunction with the non-park development, to a nearby site of comparable size and with comparable facilities.

Major Goal 2

A high quality of life for all residents

Focused Goal 2-1

A safe community free from manmade and natural hazards (See Safety Element and Noise Element)

Focused Goal 2-2

Outdoor recreation opportunities for all residents (See Open Space and Recreation Element)

Focused Goal 2-3

A balanced and efficient transportation system *(See Circulation Element)*

Focused Goal 2-4

High quality public facilities and services *(See Circulation Element)*

Focused Goal 2-5

Excellence in urban design

Focused Goal 2-6

Strong identity at the City and Neighborhood levels

Focused Goal 2-7

Safe and affordable housing for all residents *(See Housing Element)*

Objective 2-1

Install landscaped city gateway entrances and streetscape improvements, as described in the Community Design standards (see Section E of the Land Use Element), within three years of General Plan adoption.

Objective 2-2

Develop standards relative to trees, underplantings, and groundcovers for streets, center medians, parkways, parking lots, pathways, and trails.

Policy 2-1

Implement the Community Design principles contained in the Land Use Element.

Policy 2-2

Enforce Specific Plan and Development Code standards at the Preliminary Development Plan stage, and continue to refine project-specific designs throughout the development review process. This process must maintain the overall vision for the City of Chino Hills identified in the General Plan.

Policy 2-3

Require special City of Chino Hills signage and landscape treatments at major entrances to the City.

Policy 2-4

Implement guidelines for neighborhoods relating to landscape treatment, signage, fencing, and lighting in order to enhance community identity.

Policy 2-5

Require a common center median landscape treatment within each village and neighborhood for each six-lane Arterial, four-lane Major Highway, and four-lane Secondary Highway.

Policy 2-6

All development within a recognized residential tract shall be of comparable exterior design and materials. The intent of this policy is to prevent partially completed residential tracts from being completed in a manner which is not aesthetically compatible with existing portions of the tract.

Policy 2-7

In order to provide logical planning boundaries and to simplify issues of access, the City of

Chino Hills supports the annexation into the city of the portion of Riverside County generally between Chino Hills and the Chino Valley (Highway 71) Freeway.

Policy 2-8

Where different land use densities are shown within a single project site on the General Plan or Specific Plan land use maps, densities may be "blended" or "clustered" if approved by the City Council, provided that the maximum allowable development yield (number of dwelling units and/or square feet of non-residential development) is not exceeded and other applicable General Plan or Specific Plan policies are addressed.

Policy 2-9

To address the special needs of the Los Serranos and Sleepy Hollow areas, the city shall seek to prepare Community Plans for these areas which address issues such as:

- *Lot Consolidation*
- *Roadways/Access*
- *Fire Protection*
- *Public Service and Utilities*
- *Building Design Standards*

Major Goal 3

Diversified economic base

Focused Goal 3-1

Commercial and service uses targeted to serve Chino Hills residents and shoppers from other cities

Focused Goal 3-2

Increased opportunities to live, work, and shop in Chino Hills

Objective 3-1

Continue to strive towards the Southern California Association of Governments (SCAG) projected jobs/housing ratio for the year 2010 for the West San Bernardino Valley, which includes the city of Chino Hills, of 1.16 jobs per housing unit.

Policy 3-1

Create a broad range of employment opportunities for Chino Hills residents which are compatible with the community's low density residential character and the skills and education of Chino Hills' work force.

Policy 3-2

Concentrate major business park and commercial uses, which represent a potential employment base, near the Chino Valley Freeway corridor.

Policy 3-3

All large region-serving commercial uses shall be located adjacent the Chino Valley Freeway corridor.

Policy 3-4

Pursue the location of corporate headquarters in the community, and evaluate the potential development of a conference center.

Policy 3-5

Seek to expand commercial activity in the City by emphasizing retail stores which serve regional, rather than purely local needs.

Policy 3-6

Use high density residential development as a buffer between business park or commercial uses and lower density residential development.

Policy 3-7

Residential and regional employment centers shall be linked through roadway extensions and through implementation of transportation management policies contained in the Circulation Element.

Policy 3-8

Work with local agencies and jurisdictions to promote employment growth coordinated with the availability of adequate housing and transportation.

Policy 3-9

Ensure the development of an aesthetically attractive and balanced commercial base compatible with the community and recognizing the predominately residential character of Chino Hills.

Policy 3-10

Child care/day care centers are encouraged in proximity to employment centers and residential areas (e.g., as part of commercial centers, residential developments and office/business park developments).

Policy 3-11

Investigate potential annexation of adjacent unincorporated properties in cases where such annexations may prove economically beneficial to the city, e.g., the area north of the Prado Flood Control Basin.

Major Goal 4

Protection of the natural environment in Chino Hills

Focused Goal 4-1

Development which relates to environmental constraints

Focused Goal 4-2

Open space lands which maintain environmental integrity and function as self-supporting, natural ecosystems (See Open Space and Recreation Element and Conservation Element)

Objective 4-1

Use the Specific Plan and the Development Code throughout the development review process to ensure that new development results in minimal impact on the natural environment.

Policy 4-1

Use landscape setbacks and open space buffers to protect existing canyon watercourses, floodways, and drainage ravines from encroachment that might affect drainage patterns or water quality.

Policy 4-2

Require erosion control techniques for all new construction.

Policy 4-3

Require new development to minimize peak runoff to the extent possible as determined by a project-specific hydrologic analysis, and to convey flows to a flood control channel or other facility approved by the City.

Policy 4-4

Limit channeling of streams to the minimal improvements necessary for flood control, as determined by a project-specific hydrologic analysis, and ensure that these improvements have a natural appearance.

Policy 4-5

Natural areas and new residential development shall be buffered by fire-resistive landscape transition zones.

F. THE LAND USE PLAN

The City's Vision Statement and the Land Use Plan

The Land Use Plan links the Vision Statement, as presented in the Preface to the General Plan, with the use of property. The Land Use Plan illustrates the future land use pattern for the city and establishes the standards for future development in the city. The Land Use Policy Map graphically illustrates land use distribution; the text indicates the types and intensities of use permitted within each land use classification depicted on the map.

The basic pattern of land uses was established before the City incorporated in 1991. However, the General Plan provides direction for the development of areas and uses which had not been envisioned by the Chino Hills Specific Plan. Most important among these are business park uses east of the Chino Valley Freeway and residential development south along Ramona Road linking the Butterfield Ranch area with residential and commercial uses adjacent Soquel Canyon Road.

Long established neighborhoods, including Sleepy Hollow and Los Serranos, have been integrated into the community without losing their unique identity. Small ranches and large lot residential areas suitable for keeping horses are an important aspect of the City. These types of uses continue in the English Road area and are expanded to areas adjacent to the Chino Hills State Park.

Grass covered hillsides dominate the western and southern portion of the community and are a key aspect of the area's character. The hills are visible from nearly every neighborhood and major street. Single-family neighborhoods penetrate into the hills in the northern half of the City, while most of the southern half is preserved as undeveloped open space. This southern area is the principal component of the Chino Hills State Park; a wilderness park of rangeland, oak woodlands, and chaparral of which 11.7 square miles is within the City of Chino Hills. The park shows visitors what Southern California "used to look like,"

even though it is within an hour or less drive of over 9-million people.

Neighborhood commercial centers are located adjacent to seven major street intersections. The most intensive commercial uses parallel the Chino Valley Freeway. Major employment centers and commercial uses targeted to visitors rather than residents parallel the Chino Valley Freeway, with the most intensive uses east of the highway.

The possibility of a continuous strip of urban development along the entire length of the Chino Valley Freeway from the 60 to 91 freeway is prevented by the Prado Flood Control Basin. This highly visible expanse of thickets and brush becomes an enormous lake during rainy periods.

Land Use Policy Maps

The Land Use Policy Maps shows a community with diverse residential neighborhoods and broad opportunities for commercial and business enterprises. Typically, a General Plan has a single citywide map of land use policy. For Chino Hills there are two.

Figure LU-1 shows land use policy for that portion of the city which is outside of the Chino Specific Plan. This map is the principal illustration of land use policy for this area. Figure LU-2 shows land use policy for the area encompassed by the Chino Hills Specific Plan. In the latter case, the Specific Plan contains the actual definition of land use policy.

Why have confusing dual maps? The General Plan land use designation for the Chino Hills Specific Plan area is a single designation: Specific Plan (SP). Unfortunately, since this area encompasses 60% of the entire city, including most developed areas, the general plan map is left with a very large hole. To help the reader understand the relationship between the General Plan and the Chino Hills Specific Plan, as well as to have consistent citywide land use policy guidance, land use policy within the Specific Plan has been presented at the same level of detail for the area within the Specific Plan as it has been for areas outside of the Specific Plan. This will

xxxxxxxx xxxxx xxxxx This is for justification.
xx

Figure LU-1 Draft General Plan Land Use
Policy 11x17

11" x 17"
colon

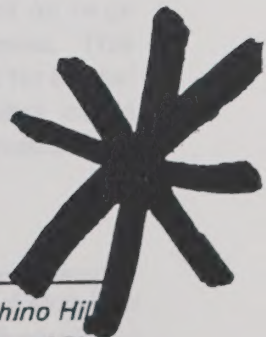
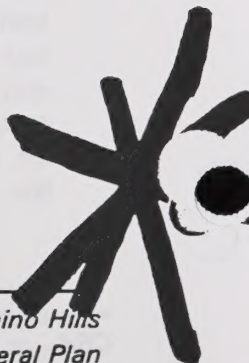


Figure LU-2 Specific Plan Land Use policy
11x17

11x17
Colon



also ease the transition for consolidation of the Chino Hills Specific Plan area into the General Plan, if at some future date the City decides to eliminate all of a portion of the Specific Plan (see land Use Objective 1-3).

The user is cautioned to refer to the Chino Hills Specific Plan for a description of the land use policy for any given parcel within the Specific Plan area. In many cases density ranges and use limitations are contained in Planned Unit Development approval documents used to implement the Specific Plan. Large Land Use Policy Maps are maintained in the Chino Hills Community Development Department and may be referred to for specific classifications for individual properties.

The maps divide the city into various land use categories and assigns each classification a name, or land use classification. Land use classifications provide information about the type and nature of development permitted at a given location. Concise definitions of the land use classifications are indicated on the Land Use Policy Map. These definitions are further defined under the heading "Land Use Classifications."

The General Plan establishes 13 land use categories. The six residential categories allow for a range of housing types for various density ranges. Two commercial classifications and one Business Park classification are provided to accommodate and encourage a range of income-generating businesses. The Institutional/Public Facility and Open Space categories are intended to protect public lands for necessary public service and open space uses.

The term *density* used in the residential classification means the number of dwelling units per acre. In certain large vacant areas of the city, the Land Use Policy Map shows a density cap (i.e., maximum number of dwelling units) allowed within the subject area. The Plan meets legal standards for ensuring development potential on all vacant privately owned properties.

Development *intensity*, which applies to non-residential classifications, refers to the extent or amount of development on a lot - the total building square footage, building bulk, the floor area ratio (FAR), and/or the percent of lot coverage.

In the Plan, the FAR technique is used to control the intensity of non-residential development. Simply stated, floor area ratio (FAR) represents the ratio between the total gross floor area of all buildings on a lot and the total area of that lot. Gross floor area includes enclosed mechanical equipment, elevator shafts, lobbies, hallways, storage/maintenance rooms, as well as enclosed above- and below-ground parking. It is determined by dividing the gross floor area of all buildings on a lot by the area of that lot. For example, a 20,000 square-foot building on a 40,000 square-foot lot represents a FAR of 0.50:1. A 0.50 FAR allows a low-rise building which covers most of the lot, amid-size structure with reduced lot coverage, or a tall building with ample surrounding open space. The FAR mechanism encourages diversity in building design, such as articulated building facades and stepped-back structures, by allowing options for achieving the FAR standard as part of the development review process. This is particularly important on parcels with environmental considerations such as hillsides, oak trees, riparian habitat, and other environmental factors.

Land Use Classifications

All land in the city is designated on the Land Use Policy Map with one of the 13 land use classifications. These classifications are described as follows:

Agriculture/Ranches (0-0.2 dwelling units/acre or less): The Agriculture/ Ranches land use classification proposes development on large lots, typically five acres in size or more. This classification includes areas suitable for equestrian estates, agricultural uses, and cattle grazing. Both public and private stables and related uses are allowed.

Local roads and public improvements to support this development classification may be of rural standards (i.e., rolled curbs, and no sidewalks) as defined in the Circulation Element.

Rural Residential (0.2-2 dwelling units/ acre or less): The Rural Residential land use classification permits development on very large lots, with a minimum of one-half acre or larger, depending on slope and hazard factors. In general, the rural residential classification is applied to minimize the visual impact and hazard of development in areas of steep slope and landslide hazard. On large parcels, development will be concentrated in more developable areas with large contiguous areas left in open space.

Low Density Residential (2-6 dwelling units/acre): This land use classification includes remaining areas proposed for development with conventional single-family detached housing. Development at this density requires full urban levels of service and public improvements. On large parcels, development will be concentrated in more developable areas with large contiguous areas left in open space.

Medium Density Residential (6-12 dwelling units/acre): This land use classification includes densities appropriate for single-family small lot subdivisions, single-family attached townhouses, two-story townhouses, condominiums, and low-density apartments.

This classification is generally applied in areas of relatively flat land with good access to arterial streets and public services.

On large parcels, development should be concentrated in more developable areas with large contiguous areas left in open space. Parcels should be laid out to minimize visual impact of development as well as roads.

High Density Residential (12-25 dwelling units/acre): This land use classification includes higher density condominiums and apartments of two stories, generally with at grade parking. Low- and moderate-income housing can be developed at this density with

density bonuses to reduce housing cost. On large parcels, development should be concentrated in more developable areas with large contiguous areas left in open space.

Very High Density Residential (25-35 dwelling units/acre): This classification is applied to several sites adjacent to shopping and employment areas. It is intended for affordable rental and ownership units. To achieve this density, buildings of three stories in height may be required.

General Commercial (0.30:1 FAR): This land use classification indicates areas of concentrated retail use where shoppers often make a single trip to visit a number of related establishments. Shopping centers include food, drug, clothing, and other retail uses and services such as small restaurants, laundry outlets, etc. Offices are considered secondary, but appropriate, uses in this classification. General Commercial uses include service and repair facilities, small offices (e.g., medical/dental), hardware and building materials stores, auto and accessories dealers, appliance outlets, theatres, etc. Office uses are also permitted in areas designated for General Commercial.

Business Park (0.75:1): This classification primarily includes both small and large-scale businesses involved in light manufacturing, distribution, or support services, as well as a variety of commercial uses. In general, customers of this land use classification are other businesses, although commercial uses may serve customers from the community or the region. Also allowed are offices and ancillary retail uses. Development is often two stories, but may reach six stories. In some cases retail uses will be in the ground floor with offices above. Retail uses may serve as support to the primary office use, or may be developed as stand-alone uses.

Commercial Recreation (0.10:1 FAR): This land use classification Private Open Space includes public and private golf courses and amusement areas, equestrian centers, tennis clubs, batting cages, and related uses such as pro-shop or restaurant if a part of a recreation

complex. It may also be applied to a destination resort hotel developed as part of a golf course or open space-oriented project. This designation may also be applied to lands required to be set aside as open space which have not been dedicated to or accepted by a public agency; on these lands, no development may take place other than open space uses specifically permitted by the applicable Planned Unit Development and/or deed restrictions.

Public/Private Open Space This category is applied to public and private open space areas, which have been acquired in fee ownership by the City or other public agency or which have been required to be set aside as open space within private developments and remain owned by private persons, a Homeowners Association, or other non-public entity. In most cases, these areas were acquired through density transfer agreements within Planned Unit Developments. This classification includes public recreational facilities and passive parks. The Chino Hills State Park is designated separately on the General Plan Land Use Map.

Institutional/Public Facility (0.50:1 FAR): This land use classification includes all city, County, and other government properties (such as the Civic Center), public and private schools, churches, and fire stations. Public Facilities also include public utilities and utility rights-of-way.

Specific Plan:

A Specific Plan is a plan adopted by the City to implement the General Plan for a designated area. The Chino Hills Specific Plan (CHSP), which comprises sixty percent of the corporate area of the City, was originally adopted in 1982 to implement the County General Plan (see Figure LU-2). Upon incorporation in 1991, Chino Hills adopted the CHSP, which now defines and describes land use policy for that portion of the City's General Plan.

The Development Code contains detailed Specific Plan procedures. General require-

ments for the application and contents of a Specific Plan are as follows:

1. A minimum area of 500-acres is preferred for a Specific Plan.
2. The distribution, location, and extent of the uses of land, including open space, within the area covered by the Specific Plan. The plan must contain, as appropriate, a detailed visual analysis illustrating potential views of development from and into the Chino Hills State Park, and from designated arterial highways and Chino Valley Freeway.
3. The proposed distribution, location, and extent and intensity of major components of public and private transportation, sewage, water, drainage, solid waste disposal, energy, and other essential facilities proposed to be located within the area covered by the plan and needed to support the land uses described in the plan.
4. Standard and criteria by which development will proceed, and standards for the conservation, development, and utilization of natural resources, where applicable.
5. A program of implementation measures including regulations, programs, public works projects, and financing methods, including detailed estimates of capital and maintenance cost to the City and other public agencies, necessary to carry out items (2), (3), and (4).
6. A description of the plans' consistency with all applicable Goals and Policies of the General Plan.
7. Any other sections deemed necessary by the City to address project specific uses.

The use of the Specific Plan concept is an integral part of the Land Use Element and is intended to help insure that potential development in unurbanized portions of the community is in keeping with General Plan Goals and Policies.

Overlay Classifications

Planned Unit Development (PUD) (*mixed residential uses at varying densities, with ancillary commercial, open space, and institutional uses - a minimum of 10 acres is needed for a PUD - residential density not to exceed the overall maximum density for the project site as shown on the Land Use Policy Map of the General Plan or Specific Plan - minimum lot size standards in the Development Code apply*): Planned Developments are precise land use plans which may be applied to an area to further define land use applicable to that area. PUDs encourage the use of density transfers within the Planned Unit Development to concentrate development in the most suitable portions of a property and preserve the maximum amount of open space. A Planned Unit Development may not be used to exceed the maximum number of dwelling units which would be permitted within the PUD area, based on the underlying land use designation. A Planned Unit Development generally acts as the "zoning" for the property, often establishing setbacks and other regulations different from those found in the City's Development Code. The Development Code establishes procedures for such transfers, and contains stringent guidelines to ensure the preservation of native plant and animal life, hillsides, ridgelines, and open space.

Development under any of the General Plan residential and open space categories may be contained within a given PUD as long as the overall density does not exceed the underlying General Plan Land Use Policy or Specific Plan Land Use Policy designation. Residential uses must be the primary use, with commercial uses limited to those designed to serve strictly local needs or if the commercial use is a destination resort/hotel. Commercial uses may comprise no more than 15 percent of a PUD's total land area.

Planned Developments allow development different from that which can be achieved through the strict use of conventional land use and development criteria. PUDs are developed within a framework which allows for clustering units, mixing of uses and building types,

use of special development standards, and criteria which respond to the particular features of a site.

Flood Overlay: Areas known to be subject to 100-year and 500-year floods are designated on Federal Flood Insurance Rate Maps. Development is strictly regulated in such areas, and not allowed at all in designated floodways. A discussion of flooding in Chino Hills is contained in the Safety Element of the General Plan.

Seismic Safety Overlay: A Seismic Safety overlay has been identified adjacent to the trace of the Chino Hills Fault. This fault, located in the southeastern portion of the city, has been identified in various development-related geotechnical studies as having the potential for ground rupture, although the fault is not considered active. The fault zone has been mapped and is described in detail in the Safety Element.

Implications of Land Use Policy

The maximum permitted development densities and/or intensity specified in each of the General Plan land use classifications enable the city to anticipate the future level of development citywide and to plan public service and infrastructure needs accordingly. The maximum intensities permitted by land use policy will not be achieved on every parcel of land. In addition, the Specific Plan places development caps which are near the midpoint of the range of each residential density identified by a General Plan classification. Also, lot size constraints and configurations, individual development objectives, unique project designs, and other factors will lead to varying intensities throughout the city.

Table LU-1 lists the total acreage and projected residential unit total or non-residential square footage within each of the land use classifications shown on Figure LU-1. Table LU-2 indicates the number of residential units, as well as forecasts for the resident population, of the city at buildout.

The residential buildout forecast is based on detailed analysis of approved and pending residential projects, areas suitable for new development, and environmental constraints to new development. Non-residential buildout potential is based on the typical FAR achieved on a site, considering requirements for parking, setbacks, and landscaping.

Specific Plan and Development Code

The Goals, Objectives, and Policies of the General Plan are implemented through land development regulations, standards, and detailed guidelines contained in two separate documents which apply to two distinct portions of the city. The Chino Hills Specific Plan (CHSP) defines land use policy within the 60 percent of the city encompassed by the Specific Plan.

The Development Code serves as the primary implementing tool for areas covered by the General Plan and much of the Specific Plan. It contains regulations and guidelines applicable to most development proposals.

The CHSP has been implemented through the use of Planned Development (PD) approvals. These PD approvals, while consistent with the guiding principles of the CHSP, may vary in terms of regulations and standards. For this reason, development within an adopted PD is subject to the particular requirements of the applicable PD. The PD is in effect the "zoning" for that property.

Table LU-3 shows the relationship between the General Plan land use classifications, Development Code divisions, and Specific Plan divisions. Table LU-4 summarizes the General Plan overlay classifications.

**Table LU-1
Land Use Policy Implications
General Plan Buildout⁽¹⁾**

Land Use Classification and Maximum Permitted Density Intensity	Gross Acreage			Potential Units	Potential Square Footage
	General Plan	Chino Hills Specific Plan	Total City		
RESIDENTIAL ⁽²⁾					
Agriculture/Ranches (0-0.2 du/ac or less)	3,674	4,655	8,329	750 ⁽³⁾	--
Rural Residential (0.2-2 du/ac)	0	1,094	1,094	1,170	--
Low Density Residential (2-6 du/ac)	347	4,326	4,673	11,820	--
Medium Density Residen- tial (6-12 du/ac)	169	338	507	5,045	--
High Density Residential (12-25 du/ac)	47	481	528	6,280	--
Very High Density Resi- dential (25-35 du/ac)	0	44	44	1,125	--
COMMERCIAL					
General Commercial (0.25 FAR)	17	401	418	--	5.5 million sq.ft. ⁽⁴⁾
Business Park (0.75 FAR)	0	496	496	--	8.6 million sq.ft. ⁽⁵⁾
Commercial Recreation (0.50 FAR)	117	824	941	--	-- ⁽⁶⁾
INSTITUTIONAL/PUBLIC FACILITY					
Institutional/Public Facility (0.50 FAR)	11	836	847	--	-- ⁽⁷⁾
OPEN SPACE					
Streets	173	260	433	--	--
Public Open Space	311	3,377	3,688	2	--
State Park	6,915	0	6,915		
TOTAL CITYWIDE	11,781	17,132	28,363	26,190 dus	14.1 million sq.ft.

1. General Plan buildout includes both existing and potential future development, see Chino Hills Specific Plan for detailed build-out information within the Specific Plan area. Buildout is expected to occur sometime after the 20-year planning period covered by the document ends (i.e., after 2014).
2. Residential buildout is based on a mid-point of the allowed General Plan density ranges, adjusted for existing development as of March 1993, except for the Agricultural/Ranches, areas which are limited by the Specific Plan.
3. Development is limited to a maximum of 76 dwelling units for 3,000 acres zoned 1 dwelling unit per 40 acres in the General Plan areas, and 300 unit each for the Tres Hermanos planning area of the Chino Hills Specific Plan.
4. Assumes an average FAR of 0.25.
5. The Business Park square footage estimate assumes an average FAR of 0.50, approximately half of the development within this area is expected to be commercial retail and wholesale and half light industrial, warehousing and manufacturing.
6. No average FAR or potential square footage has been assigned to the Commercial Recreation area because any buildings are part of large open space areas such as golf courses and equestrian centers.
7. Due to the wide range of land uses permitted (e.g., Civic Center, schools, churches), no average FAR or potential square footage has been assigned.

Source: Cotton/Beland/Associates, Inc., September 14, 1994

Table LU-2
Population and Dwelling Unit Projections
Based on Land Use Acreages Illustrated on Land Use Policy Map

Housing Type	Number of Dwelling Units			Population Range at Buildout
	Base Year (1993)	Future Growth	Chino Hills Specific Plan and General Plan at Buildout	
Single-family	12,790	6,700	19,490	54,300 - 59,400
Multi-family	2,880	3,200	6,080	16,900 - 18,500
Mobile homes	620	0	620	1,700 - 1,800
Total	16,290	9,900	26,190	72,400 - 79,800

Note: Projections for dwelling units and population have been rounded to the nearest hundred. The base year estimate was made in March 1993. Residential buildout estimates include both existing and future housing development. Using the 1993 citywide vacancy factor of 8.7 percent, an estimated 23,900 of the city's total 26,190 housing units would be occupied. Applying the estimated average household size of 3.05 results in an estimated city population of 72,900 at "buildout" (i.e., total development of the city), up to 79,800 with no unit vacancies.

Source: Cotton/Beland/Associates, Inc., September 14, 1994.

Table LU-3
Relationship of Land Use Classifications to Development Code Districts

General Plan and Specific Plan Land Use Classification	Development Code District
Agriculture/Ranches 0.5 du/ac or less	R-R Rural Residential
Rural Residential 0.5 - 2 du/ac or less	
Low Density Res. 2-6 du/ac	R-L Low Density Residential
Medium Density Res. 6-12 du/ac	R-1 Medium Density Residential
High Density Res. 12-25 du/ac	R-2 (High Density Residential)
Very High Density Res. 25-35 du/ac	R-3 Very High Density Residential
General Commercial 0.25:1 FAR	CN Neighborhood Commercial C-G General Commercial
Business Park 0.75:1 FAR	BP-M Business Park/Manufacturing
Commercial Recreation 0.50:1 FAR	C-R Commercial Recreation
Institutional/Public Facility T - Transportation W - Water PF - Public Facilities S - School Ch - City Hall L - Library U - Utility Easement F - Fire Station S - Sheriff CY - City Yard	I-1 private I-2 public
Open Space	OS open space

Table LU-4
General Plan Overlay Classifications

Overlay	Description
Planned Unit Development (See Chino Hills Specific Plan)	Applies to vacant areas with a minimum area of 50 acres. Allows for mixed use development guided by underlying General Plan densities and Specific Plan and Development Code requirements.
Flood Overlay (See Safety Element)	Limits development within designated flood zones.
Seismic Safety Overlay (See Safety Element)	Limits development within potential fault rupture areas.

Y&R-100

1. Name of the person or organization to whom the report is made	2. Name of the person or organization making the report
3. Date of the report	4. Title of the report
5. Summary of the report	6. Details of the report
7. Conclusion of the report	8. Signature of the person making the report

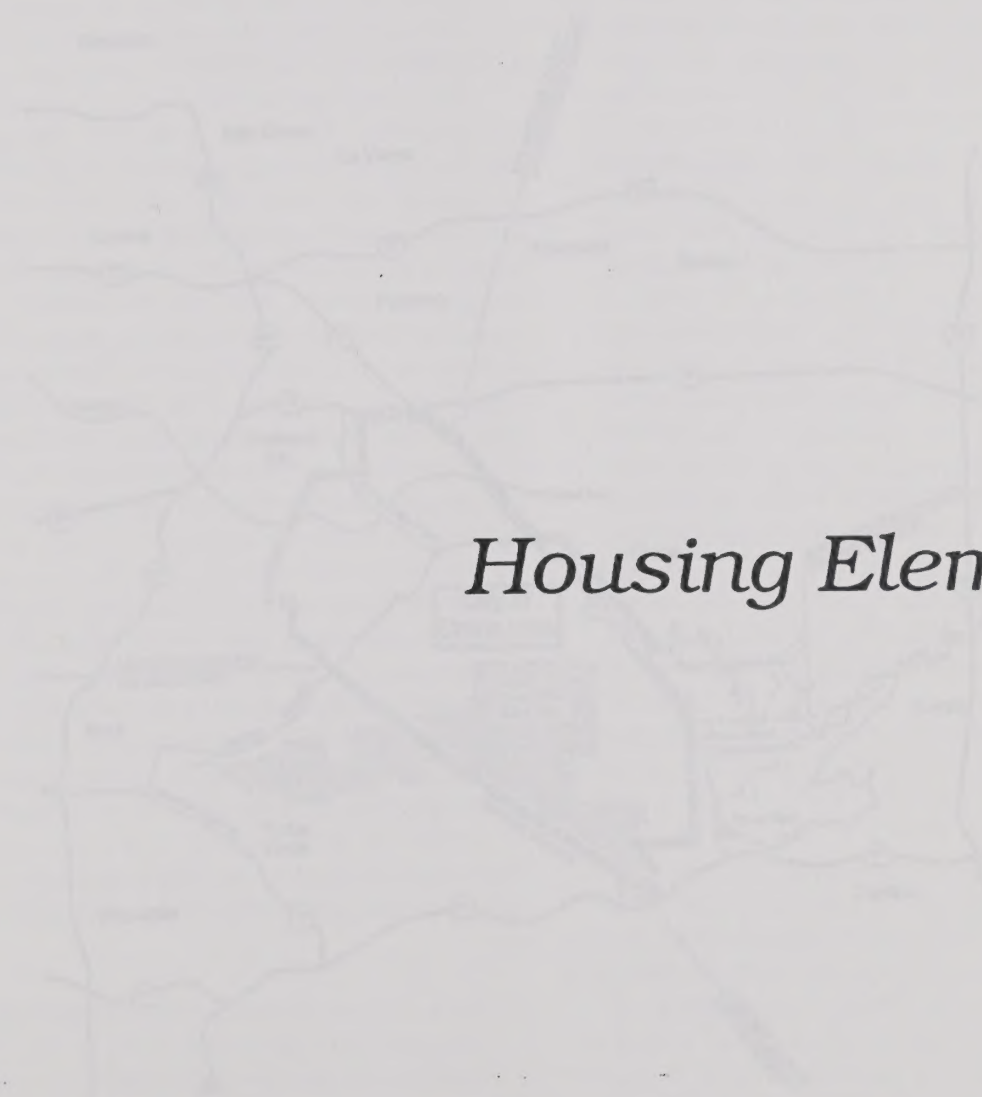
9. Name of the person or organization to whom the report is made	10. Name of the person or organization making the report
11. Date of the report	12. Title of the report
13. Summary of the report	14. Details of the report
15. Conclusion of the report	16. Signature of the person making the report
17. Name of the person or organization to whom the report is made	18. Name of the person or organization making the report
19. Date of the report	20. Title of the report
21. Summary of the report	22. Details of the report
23. Conclusion of the report	24. Signature of the person making the report
25. Name of the person or organization to whom the report is made	26. Name of the person or organization making the report

Chapter 2 Housing Element

I. INTRODUCTION

The City of Chico has experienced significant growth in its population in recent years. San Bernardino County with a current (2010) population of approximately 45,000. The City is uniquely situated adjacent to the County

boundaries. Los Angeles County, and Kern County - and is just north of the city of Colton to the east. Formerly, the north, the city was situated far to the east, and there were no other cities in the area.



Housing Element

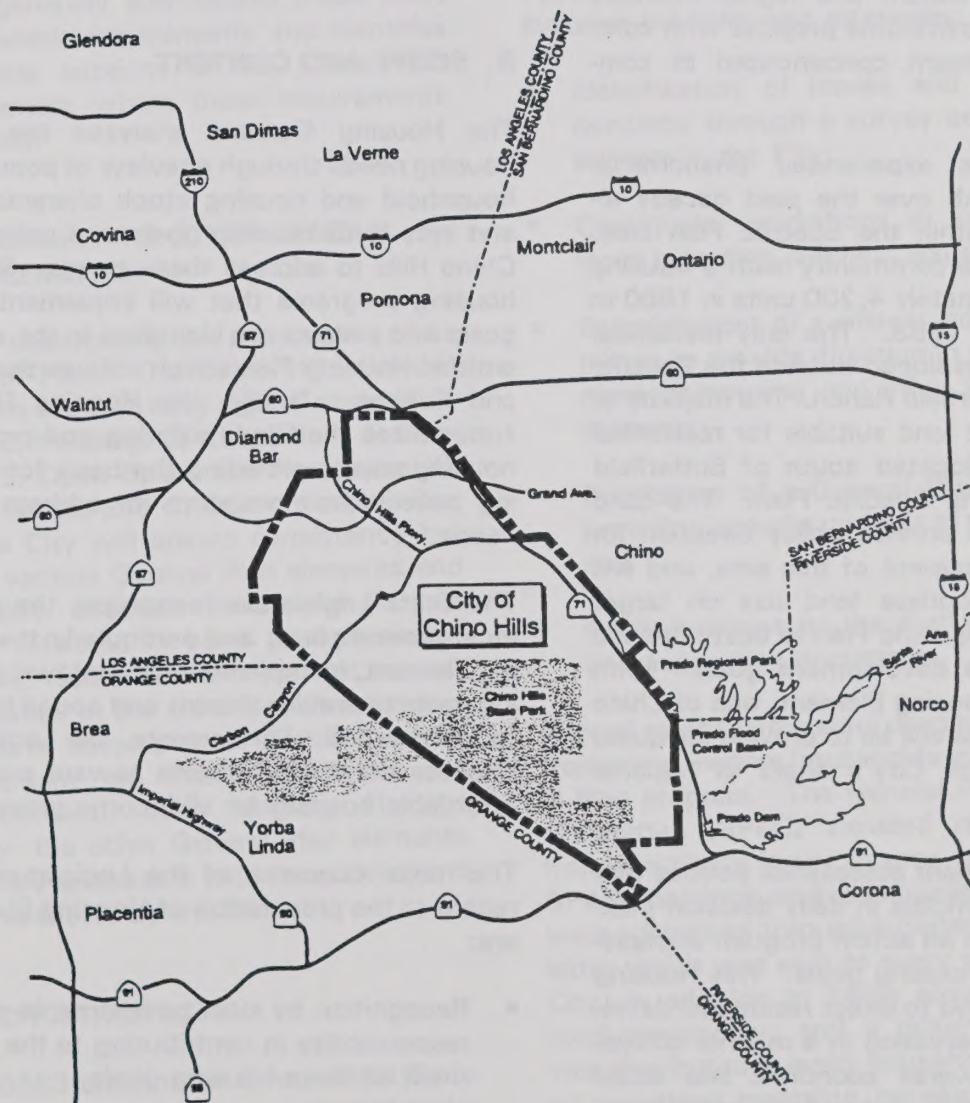
Housing Element

Chapter 2 Housing Element

I. INTRODUCTION

The City of Chino Hills encompasses approximately 46 square miles in southwestern San Bernardino County with a current (1993) population of approximately 48,000. The City is uniquely situated adjacent three County

jurisdictions - Los Angeles, Orange, and Riverside - and is surrounded by the cities of Chino to the east, Pomona to the north, Brea and Diamond Bar to the west, and Yorba Linda to the south.



While the City only recently incorporated in December 1991, land use policy is already well established for over 60 percent of its jurisdiction through the Chino Hills Specific Plan. The 1982 Specific Plan (subsequently amended in 1990) encompasses over 27 square miles, making Chino Hills one of the largest master planned communities in Southern California. The premise of the Specific Plan is to direct development away from environmentally sensitive areas - including steeply sloping hillsides, floodplains, and sensitive habitat - and to allow for higher densities in those areas most suited to development. The resulting residential development pattern is characterized by clustered single-family tracts, and a mix of medium and higher intensity apartment and townhome projects with commercial development concentrated in commercial centers.

Chino Hills has experienced phenomenal residential growth over the past decade almost entirely within the Specific Plan area, increasing from a community with a housing stock of approximately 4,200 units in 1980 to 16,300 units in 1993. The only residential area currently developed outside the Specific Plan area is Butterfield Ranch. The majority of remaining vacant land suitable for residential development is located south of Butterfield Ranch outside the Specific Plan. The Land Use Element will provide policy direction for the future development of this area, and will re-evaluate appropriate land use on target sites within the Specific Plan to best fulfill the City's long-range development goals. With respect to the Housing Element, one of Chino Hills primary goals will be to provide adequate sites to fulfill the City's share of regional housing needs.

The Housing Element establishes policies that will guide City officials in daily decision making and sets forth an action program to implement the City's housing goals. This Housing Element is intended to direct residential development and preservation in a manner consistent with the overall economic and social values of Chino Hills and to fulfill state housing law.

A. PURPOSE OF THE ELEMENT

The Land Use Element is concerned with housing in a spatial context while the Housing Element identifies programs aimed at meeting the identified housing needs of the City's population. Concerns of the Chino Hills Housing Element include the identification of housing strategies and programs that focus on: 1) conserving and improving existing affordable housing; 2) providing adequate housing sites; 3) assisting in the development of affordable housing; 4) removing governmental constraints to the development of housing; and 5) promoting housing related services and equal housing opportunities.

B. SCOPE AND CONTENT

The Housing Element analyzes the City's housing needs through a review of population, household and housing stock characteristics and sets forth housing goals and policies for Chino Hills to address these needs. Specific housing programs that will implement these goals and policies are identified in the section entitled Housing Plan which follows the Goals and Policies. Finally, the Housing Element summarizes the City's existing and projected housing needs, providing the basis for targeting policies and programs to address these needs.

The State Legislature recognizes the role of local general plans, and particularly the Housing Element, in implementing Statewide housing goals to provide decent and sound housing for all persons. Furthermore, the Legislature stresses continuing efforts toward providing affordable housing for all income groups.

The major concerns of the Legislature with regard to the preparation of Housing Elements are:

- Recognition by local governments of their responsibility in contributing to the attainment of State housing goals;

- Preparation and implementation of City and County Housing Elements which coordinate with State and Federal efforts in achieving State housing goals;
- Participation by local jurisdictions in determining efforts required to attain State housing goals; and
- Cooperation between local governments to address regional housing needs.

The State Department of Housing and Community Development sets forth specifics regarding the scope and content of housing elements prepared by cities and counties. Table H-1 generally summarizes these State Housing Element requirements and identifies the applicable sections of the Chino Hills Housing Element where these requirements are addressed.

C. RELATIONSHIP TO OTHER GENERAL PLAN ELEMENTS

The City is undertaking the preparation of its first General Plan. The Chino Hills General Plan contains the following eight elements: 1) Land Use; 2) Housing; 3) Circulation; 4) Conservation; 5) Open Space and Recreation; 6) Safety; 7) Noise; and 8) Economic Development. The City will ensure consistency between the various General Plan elements and ensure policy direction introduced in one element is reflected in other plan elements. For example, residential development capacities established in the Land Use Element and constraints to development identified in the Safety Element are incorporated into the Housing Element. This Housing Element builds upon the other General Plan elements and is entirely consistent with the policies and proposals set forth by the Plan.

D. PUBLIC PARTICIPATION

Section 65583(c)(5) of the Government Code states that "The local government shall make diligent effort to achieve public participation of

all the economic segments of the community in the development of the housing element, and the program shall describe this effort."

Public participation played an important role in the formulation of the Chino Hills housing goals and policies and in the development of a Land Use Plan which determines the extent and density of future residential development in the community. Furthermore, the Specific Plan which was incorporated into Land Use Policy was developed through extensive community involvement and public review and represents the community's consensus regarding planning for the area.

Public participation in the General Plan process included the following strategies:

- Identification of issues and community concerns through a survey sent to every address in the City;
- Community workshops to solicit citizen input regarding planning issues;
- Establishment of a citizens advisory committee to provide direction in the development of Housing and other General Plan elements;
- Publication of a General Plan newsletter providing periodic updates of the program; and
- Public hearings on the draft General Plan and supporting documents.

Several mechanisms were used to solicit input from lower income households into the General Plan program. The General Plan Advisory Committee (GPAC) included representation from the City's lower income neighborhood; GPAC meetings and community workshops were advertised through a General Plan newsletter which was sent to every address in the City, in addition to being advertised in the local newspaper; and a community survey was distributed to every household and included questions regarding housing affordability and maintenance.

**Table H-1
State Housing Element Requirements**

Required Housing Element Component	Reference
A. <u>Housing Needs Assessment</u> 1. Analysis of population trends in Chino Hills in relation to regional trends. 2. Analysis of employment trends in Chino Hills in relation to regional trends. 3. Projection and quantification of Chino Hills' existing and projected housing needs for all income groups. 4. Analysis and documentation of Chino Hills' housing characteristics including the following: a. level of housing cost compared to ability to pay; b. overcrowding; c. housing stock condition. 5. An inventory of land suitable for residential development including vacant sites and having redevelopment potential and an analysis of the relationship of zoning, public facilities and services to these sites. 6. Analysis of existing and potential governmental constraints upon the maintenance, improvement, or development of housing for all income levels. 7. Analysis of existing and potential nongovernmental and market constraints upon maintenance, improvement, or development of housing for all income levels. 8. Analysis of special housing needs: handicapped, elderly, large families, female-headed households, farmworkers.	Chapter II, Section A Regional Housing Needs Assessment Chapter III Chapter II, Section B Chapter II, Section B Chapter II, Section C Chapter V, Section A Chapter IV, Section B Chapter IV, Sections A, C Chapter II, Section B

Table H-1
State Housing Element Requirements
(Continued)

Required Housing Element Component	Reference
9. Analysis concerning the needs of individuals and families in need of emergency shelter in Chino Hills.	Chapter II, Section B
10. Analysis of opportunities for energy conservation with respect to residential development.	Chapter V, Section B
11. Analysis of assisted housing developments eligible to change from non-low income housing use.	Chapter II, Section D
B. <u>Goals and Policies</u>	
1. Identification of Chino Hills' goals, quantified objectives, policies, and financial resources relative to maintenance, improvement, and development of housing.	Chapter VI, Section A
C. <u>Implementation Program</u>	
An implementation program should do the following:	
1. Identify adequate sites which will be made available through appropriate action with required public services and facilities for a variety of housing types for all income levels.	Chapter VI, Section D
2. Program to assist in the development of adequate housing to meet the needs of low-and moderate-income households.	Chapter VI, Section D
3. Identify and, when appropriate and possible, remove governmental constraints to the maintenance, improvement, and development of housing in Chino Hills.	Chapter VI, Section D
4. Conserve and improve the condition of the existing and affordable housing stock in Chino Hills.	Chapter VI, Section D
5. Promote housing opportunities for all persons.	Chapter VI, Section D
6. Preserve for lower income households assisted housing developments.	

E. SOURCES OF INFORMATION

A number of data sources were utilized to create the Chino Hills Housing Element. These resources include:

- San Bernardino County, Comprehensive Housing Affordability Strategy, 1991.
- San Bernardino County, Housing Element, 1989.
- San Bernardino County Development Code, 1991.
- Chino Hills Specific Plan, 1982 (amended 1990).
- Los Angeles County, Comprehensive Housing Affordability Strategy, 1992.
- City of Pomona, Comprehensive Housing Affordability Strategy, 1991.

In addition, a windshield survey of housing conditions was conducted in the City's older neighborhoods. The neighborhoods surveyed included Los Serranos, Sleepy Hollow, and Canon Lane.

Methodology for Determining Baseline Unit/Population Counts

As a newly incorporated City (December 1991), the 1990 Census does not break out statistics for the Chino Hills jurisdiction. Statistical information for the City, however, can be obtained by aggregating individual census tract data.

As part of the General Plan process, a physical inventory of the City's housing stock was conducted in March 1993 to confirm

the City's unit count. The count reported the following housing unit mix:

Single-family units	12,790
Multiple-family units	2,881
Mobilehomes	<u>615</u>
Total Units	16,286

This empirical unit count is approximately 3,000 units higher than that reported by the 1990 Census, which indicated 12,296 units for the Chino Hills and Los Serranos "Census Designated Place" (CDP). These differences are attributable to the three year time difference between the counts, and to an apparent unit undercount in the Butterfield Ranch area.

(The Department of Finance estimates 15,416 housing units in Chino Hills as of January 1993, within five percent of the City's March 1993 housing count).

Using the 1993 Citywide Department of Finance vacancy factor of 8.7 percent, an estimated 14,869 of the City's total 16,286 units are occupied. Applying the Department of Finance's 1993 estimated average household size of 3.231 for Chino Hills translates to an estimated City population of 48,041 as of March 1993. (The Department of Finance estimates a population of 45,612 in Chino Hills as of January 1993 - a five percent difference). These population, household, and housing unit figures provide the baseline for analysis in the Housing Element. The 1990 Census provides the best source of information on characteristics of the City's housing stock and population, and has been applied proportionately to these 1993 baseline figures.

II. BACKGROUND INFORMATION

A successful strategy for improving housing conditions must be preceded by an assessment of the housing needs of the community and region. This section of the Housing Element discusses the major components of housing need including trends in Chino Hills' population, households, and the type of housing available. Since these changes have not occurred in a vacuum, the regional context is also presented.

The analysis which follows is broken down into four major subsections. Section A, Population Characteristics, analyzes the City of Chino Hills in terms of individual persons and attempts to identify any population trends that may affect future housing needs. Section B, Household Characteristics, analyzes Chino Hills in terms of households, or living groups, to see how past and expected household changes will affect housing needs. Section C, Housing Stock, analyzes the housing units in Chino Hills in terms of availability, affordability, and condition. Section D, Assisted Housing At-Risk of Conversion, analyzes housing units that are currently restricted to low income housing use and are "at-risk" to converting to market rate units. This assessment of Chino Hills' housing needs will serve as the basis for identifying appropriate policies and programs in this Element.

A. POPULATION CHARACTERISTICS

The entire Southern California region, including San Bernardino County, is among the fastest growing in the nation. Southern California, which includes Imperial, San Diego, Riverside, San Bernardino, Los Angeles, Or-

ange, Ventura and Santa Barbara Counties, grew from 11,668,707 persons in 1970 to 13,750,012 persons in 1980, representing a population gain of over 18 percent (see Table H-2). During this same ten year period, the population in San Bernardino County increased by 210,944 persons, or 31 percent, indicating that San Bernardino grew much faster than the Southern California region as a whole. Growth during the 1980s and early 1990s has been rapid as well. Between 1980 and 1993 the Southern California population grew by an additional 4,719,188 persons (34%). San Bernardino County increased in population by 661,284 persons between 1980 and 1993, a 74 percent increase.

The 1993 population of Chino Hills is estimated to be 48,041, ranking it 12th among the County's 24 jurisdictions. In comparison to surrounding jurisdictions, the City of Chino Hills experienced phenomenal growth during the 1980s. In 1980, the Census recorded a population of 12,889 persons in the area which now comprises the City's corporate limits, and by 1993, the population had increased 273 percent or by 35,152 persons. The cause of this tremendous growth can be attributed to several factors, including the quality residential living environment developed under the Chino Hills Specific Plan, and the City's geographic proximity to employment opportunities in Orange, Los Angeles and San Bernardino Counties. In addition, the migration of residents from other counties, particularly Orange and Los Angeles, into San Bernardino County to find affordable ownership housing has increased the entire region's population.

Table H-2
Regional Population Growth: 1970-1993

County	Population			Change 1970-1993	
	1970	1980	1993	# of Persons	% Increase
Imperial	74,492	92,110	131,000	56,508	76%
Los Angeles	7,032,075	7,477,503	9,158,400	2,126,325	30%
Orange	1,420,386	1,932,503	2,557,300	1,136,914	80%
Riverside	459,074	663,166	1,328,300	869,226	189%
San Bernardino	684,072	895,016	1,556,300	872,228	128%
San Diego	1,357,854	1,861,846	2,648,600	1,290,746	95%
Santa Barbara	264,324	298,694	389,200	124,876	47%
Ventura	376,430	529,174	700,100	323,670	86%
Total	11,668,707	13,750,012	18,469,200	6,800,493	58%

Source: U.S. Department of Commerce, Bureau of the Census, 1970 and 1980 Census Reports;
State of California Department of Finance, Controlled Population Estimates for January 1, 1993.

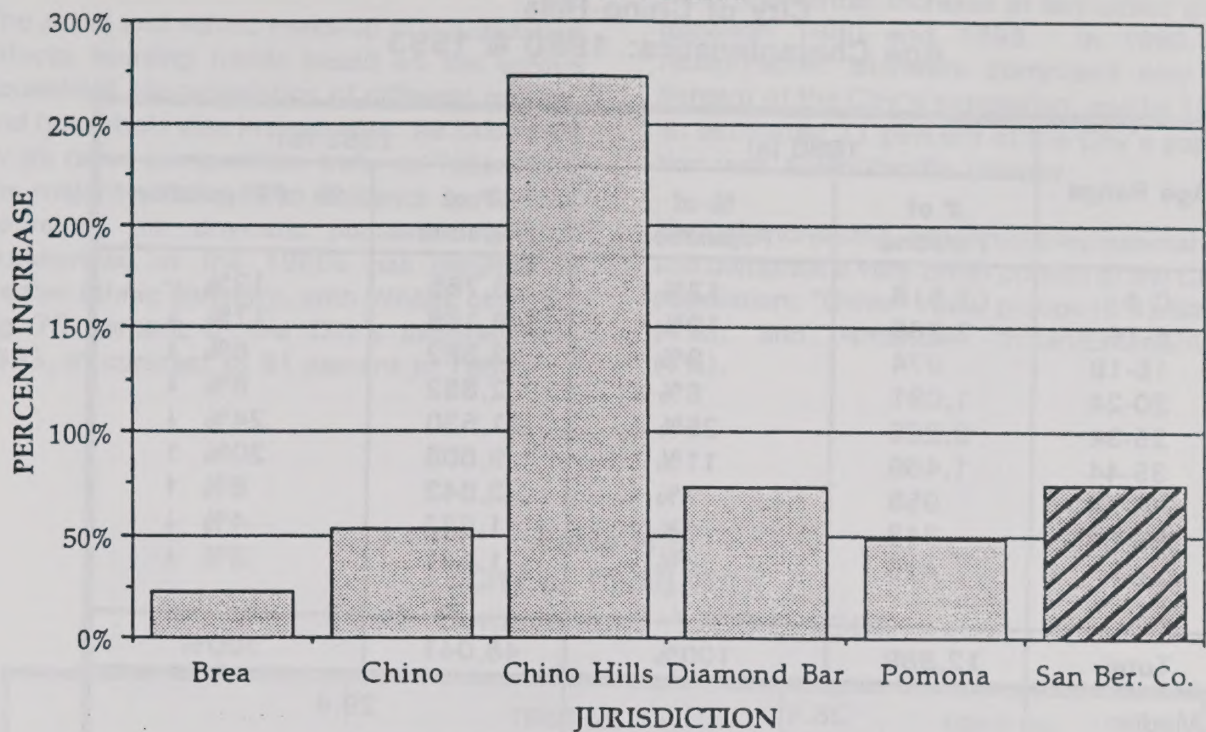
Table H-3
Population Trends:
Chino Hills and Surrounding Areas
1980 & 1993

Jurisdiction	1980(a)	1993(b)	% Increase
Brea	27,913	34,000	22%
Chino	40,165	61,300	53%
Chino Hills(c)	12,889	48,041	273%
Diamond Bar	31,482(d)	54,300	73%
Pomona	92,742	137,300	48%
San Bernardino Co.	895,016	1,556,300	74%

Source:

- (a) U.S. Department of Commerce, Bureau of the Census, 1980 Census Report;
- (b) State of California, Department of Finance, Controlled Population Estimates for January 1993.
- (c) Population estimate based on housing unit count conducted in 1993.
- (d) City of Diamond Bar General Plan, July 1992.

**PERCENT INCREASE IN POPULATION:
1980 TO 1993**



Age Characteristics

The age structure of a population is an important factor in evaluating housing needs and projecting the direction of future housing development. For example, if a city is experiencing an outmigration of young adults (25-34) there may be a shortage of first-time homebuyer opportunities, or if a City has a substantial elderly population, specialized senior citizen housing may be needed. Table H-4 illustrates the age distribution of Chino Hills residents in 1980 and in 1993. The 25-34 age group comprised the largest proportion of Chino Hills population in 1980 and continues to do so in 1993, representing nearly one-quarter of the City's population. The continued dominance of this age group reflects the range of housing types which are available in Chino Hills. The 35-44 age group has exhibited the largest increase in the City from 1,469 to 9,608 persons, or from 11 to 20 percent of the population. Other age groups remain

fairly constant with only a one to two percent proportional change between 1980 and 1993.

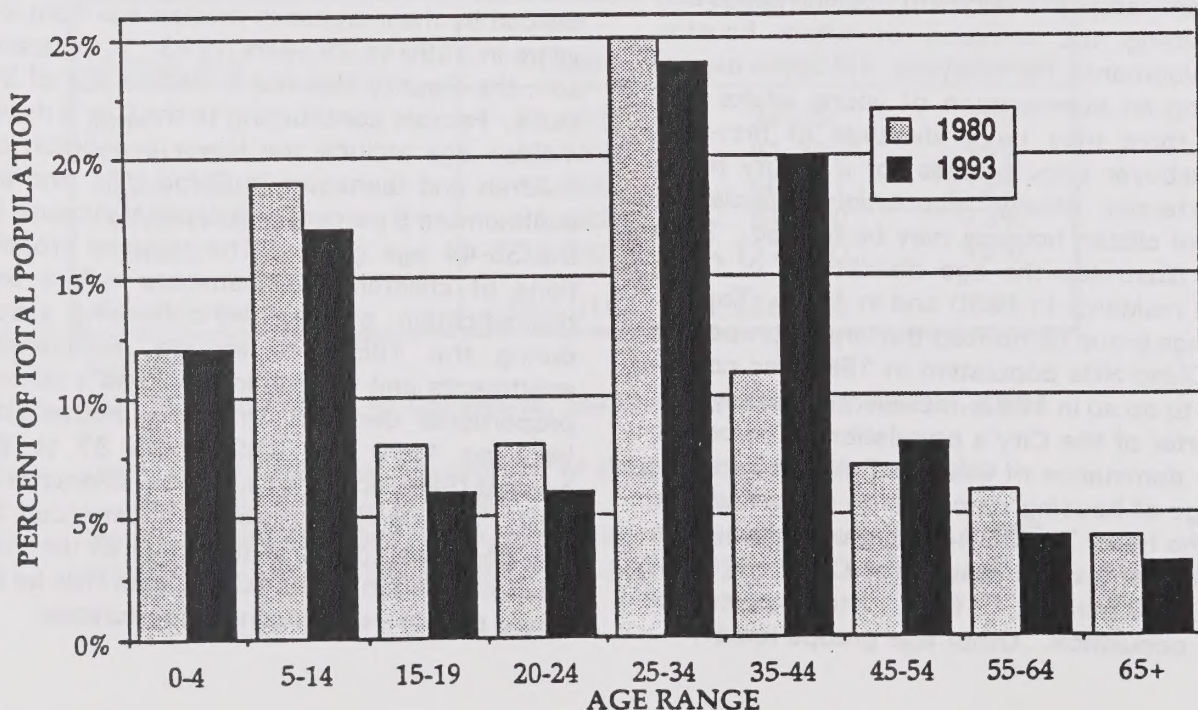
Chino Hills is a maturing community, as evidenced by the increase in median age from 26 years in 1980 to 29 years 1993. In comparison, the County also has a median age of 29 years. Factors contributing to the City's rising median age include the lower proportion of children and teenagers in Chino Hills, and an approximate 9 percent proportional increase in the 35-44 age group. The reduced proportions of children and teenagers reflect the diversification of the City's housing stock during the 1980s to include multi-family apartments and condominiums, and a related proportional decrease in family households between 1980 and 1993 from 87 to 83 percent (See Section B Household Characteristics). The significant growth experienced by the 35-44 age group is reflective of the mid-adult population attracted to Chino Hills by its range of move-up housing opportunities.

Table H-4
City of Chino Hills
Age Characteristics: 1980 & 1993

Age Range	1980 (a)		1993 (b)	
	# of Persons	% of Population	# of Persons	% of Population
0-4	1,516	12%	5,765	12% --
5-14	2,389	19%	8,168	17% ↓
15-19	974	8%	2,882	6% ↓
20-24	1,091	8%	2,882	6% ↓
25-34	3,265	25%	11,530	24% ↓
35-44	1,469	11%	9,608	20% ↑
45-54	958	7%	3,843	8% ↑
55-64	748	6%	1,922	4% ↓
65+	479	4%	1,441	3% ↓
Total	12,889	100%	48,041	100%
Median Age	26.4		29.4	

Source: (a) U.S. Department of Commerce, Bureau of Census, 1980 Census Report.
 (b) 1993 figures are obtained by applying the proportional age distribution reported in the 1990 Census to the City's 1993 population.

CITY OF CHINO HILLS
AGE CHARACTERISTICS: 1980 & 1993



Race/Ethnicity Characteristics

The racial and ethnic make-up of a population affects housing needs based on the unique household characteristics of different groups, and household size in particular. As illustrated by its racial composition (refer to Table H-5), the majority Chino Hills residents are White. However, the dramatic population growth experienced in the 1980s has resulted in greater ethnic diversity, with Whites comprising 75 percent of the City's population in 1993, in contrast to 91 percent in 1980.

The Asian/Pacific Islander group exhibited the most substantial increase of any ethnic group between 1980 and 1993. In 1980, the Asian/Pacific Islanders comprised only one percent of the City's population, and by 1993, an estimated 11 percent of the City's population was Asian/Pacific Islander.

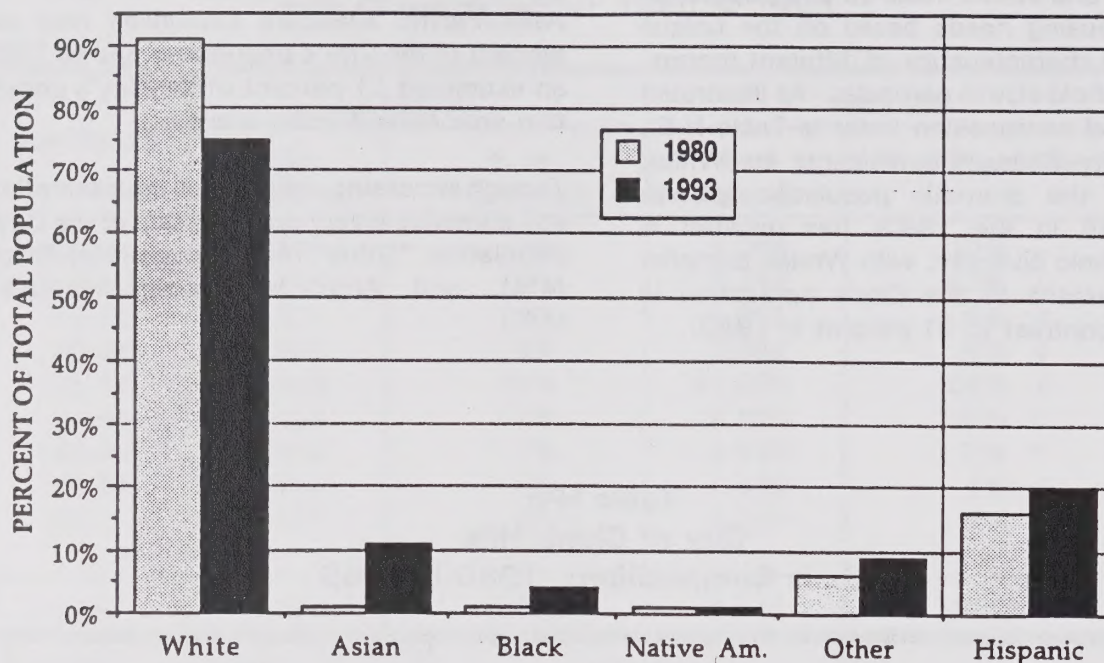
Though increasing, other racial representations still comprise a very small portion of the City's population: "Other" racial groups (9%), Blacks (4%), and American Indian/Eskimo/Aleut (1%).

Table H-5
City of Chino Hills
Ethnic Composition: 1980 & 1993

Race and Ethnicity	1980 (a)		1993 (b)	
	Number of Persons	% of Population	Number of Persons	% of Population
White	11,666	91%	36,031	75% ↓
Asian/Pacific Islander	158	1%	5,284	11% ↑
Black	172	1%	1,922	4% ↑
American Indian/ Eskimo/Aleut	119	1%	480	1% -
Other	774	6%	4,324	9% ↑
Total	12,889	100%	48,041	100%
Spanish/Hispanic Origin	2,031	16%	9,608	20% ↑

Source: (a) U.S. Department of Commerce, Bureau of Census, 1980 Census Report;
(b) 1993 figures are obtained by applying proportions of ethnic composition in the 1990 Census to City estimates of 1993 population.

CITY OF CHINO HILLS ETHNIC COMPOSITION: 1980 & 1993



In addition to the five primary racial groups, the Census has a separate question related to whether the householder is of Spanish/Hispanic origin. "Origin" is defined as the ancestry, nationality group, lineage, or country in which the person's ancestors were born before their arrival to the United States. Persons of Spanish Origin can be of any of the five racial categories. Although not as significant as the increase in Asian households, the City has experienced a substantial growth in its Hispanic population during the 1980s. An estimated 20 percent of Chino Hills' 1993 population (9,608 persons) is of Spanish/Hispanic origin, representing an increase from 1980 by about 7,577 residents.

B. HOUSEHOLD CHARACTERISTICS

Information on household characteristics is an important indicator of housing needs in a community. Income and affordability is best

measured at the household level, as are the special housing needs of certain groups such as large families and female-headed households. As an example, if a community has a substantial number of young family households whose incomes combined with local housing costs preclude the option of home purchase, the city may wish to initiate a homebuyer assistance program.

The Bureau of the Census defines a "household" as all persons who occupy a housing unit, which may include families, singles, or "other"; boarders are included as part of the primary household by the Census. Families are households related through marriage or blood, and a single household refers to individuals living alone. "Other" households reflect unrelated individuals living together (roommates). Persons living in retirement or convalescent homes, dormitories, or other group living situations are not considered households.

As shown in Table H-6, there were a total of 3,988 households in Chino Hills in 1980. The City has grown to 14,869 households in 1993, representing a 273 percent increase. Although the percentage of family households has fallen slightly as the City has grown, families still represent the City's predominant household type, comprising 83 percent of the City's households. In contrast, only 76 percent of households County-wide are family households. This family-orientation has served as a major contributor to Chino Hills popularity and related population growth.

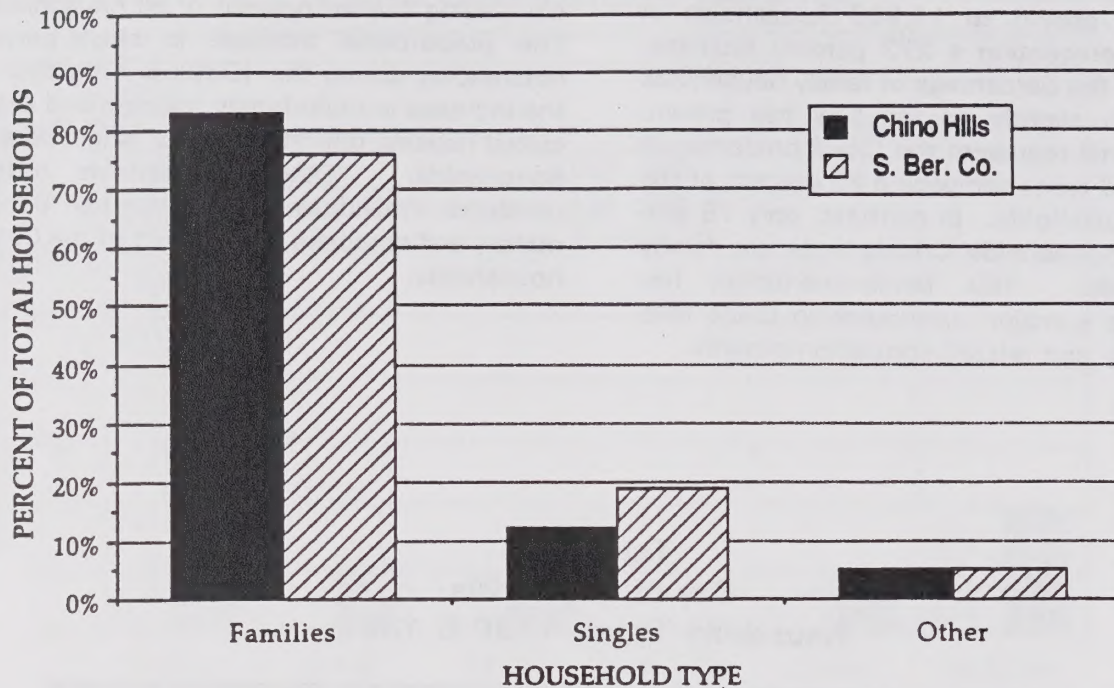
Single-person households represent the second largest household group in Chino Hills, comprising twelve percent of all households. The proportional increase in single-person households during the 1980s is reflective of the increase in multi-family housing and associated housing opportunities for single-person households. "Other" households reflect unrelated individuals living together (roommates) and comprise five percent of the City's households.

Table H-6
City of Chino Hills
Household Type: 1980 & 1993

Household Type	1980(a)		1993(b)	
	No. Households	% of Total	No. Households	% of Total
Families	3,482	87%	12,341	83% ↓
Singles	366	9%	1,784	12% ↑
Other	140	4%	744	5% ↑
Total	3,988	100%	14,869	100%

Source: (a) U.S. Department of Commerce, Bureau of Census, 1980 Census Report;
(b) 1993 figures are obtained by applying proportions contained in the 1990 Census to the City's estimates of 1993 total number of households.

**HOUSEHOLD TYPE: 1993
CHINO HILLS AND SAN BERNARDINO COUNTY**



Household Size

Household size is an important indicator of population trends as well as overcrowding in individual housing units. A city's average household size will increase over time if there is a trend toward larger families. In communities where the population is aging, the average household size may actually decline.

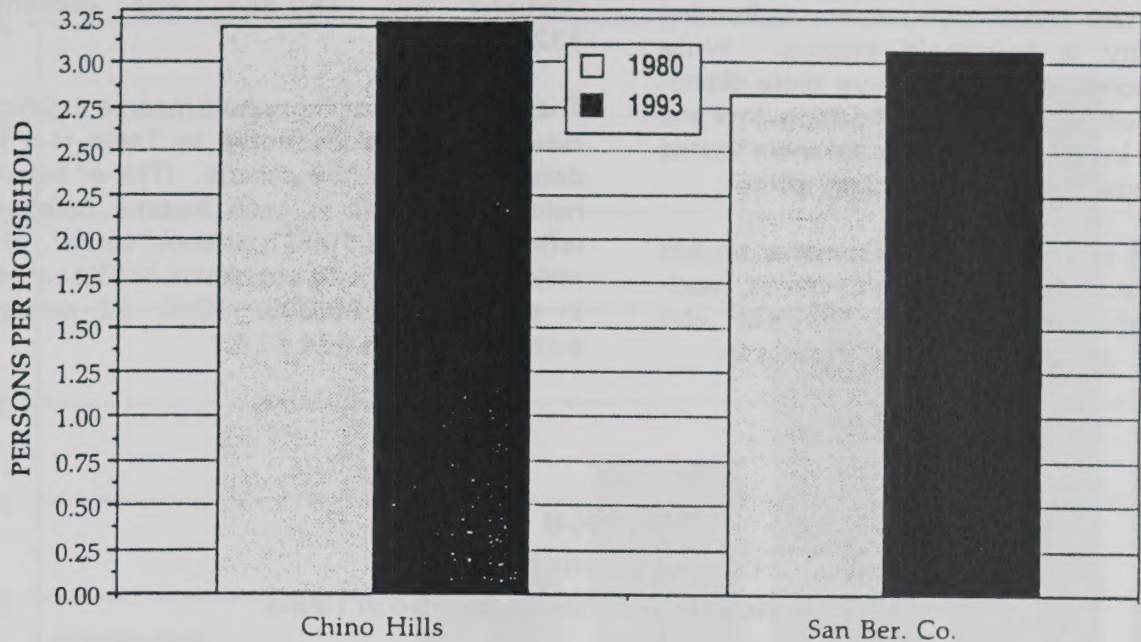
Average household size in Chino Hills was 3.2 persons per occupied unit in 1980, and had increased slightly to 3.23 per household in 1993. (Refer to Table H-7.) Compared to San Bernardino County (3.07 persons per household), the average household size in Chino Hills is higher, reflecting the greater proportion of single-family homes and family households.

**Table H-7
Household Size: 1980 & 1993**

Jurisdiction	1980 (a)	1993 (b)
Chino Hills	3.20	3.23
San Bernardino County	2.82	3.07

Source: (a) U.S. Department of Commerce, Bureau of Census, 1980 Census Report;
(b) Department of Finance's 1993 estimated average of household size.

HOUSEHOLD SIZE: 1980 & 1993



Overcrowding

Overcrowding is another indicator of housing affordability. Unit overcrowding is caused by the combined effect of low earning and high housing costs in a community, and reflects the inability of households to buy or rent housing which provides reasonable privacy for their residents. The Census defines overcrowded households as units with greater than 1.01 persons per room, excluding bathrooms, hallways and porches.

According to the 1980 Census, the incidence of overcrowding in Chino Hills was minimal, with approximately five percent or 183 of the City's households defined as overcrowded, compared with six percent County-wide. The proportion of overcrowded households in Chino Hills rose to six percent (or 892) by 1993. In comparison, an estimated 10 percent of the County's households in 1993 are

considered overcrowded. "Severely" overcrowded households (greater than 1.5 persons per room) comprise only 1.9% (297 households) of the City's total households. Of these "severely" overcrowded households, 178 (60%) were owner-occupied and 119 (40%) were renter-occupied.

While Chino Hills' larger families and extended family households may result in households defined as overcrowded under the traditional Census definition, the low incidence of severe overcrowding would indicate actual unit overcrowding is minimal. Many of the households defined as overcrowded in Chino Hills are actually less a reflection of economic necessity and more likely reflective of cultural preferences where Asian and Hispanic households choose to have grandparents and other extended family members living in the same household.

Household Income

An important factor with respect to housing affordability is household income. While upper income households have more discretionary income to spend on housing, low and moderate income households are more limited in the range of housing they can afford.

According to 1990 Census estimates applied to the Chino Hills corporate boundaries, median household income in Chino Hills was \$54,610. In comparison, the median in-

comes of surrounding jurisdictions varied widely: Brea, \$51,253; Chino, \$41,958; Diamond Bar, \$60,651; and Pomona, \$32,132.

The *distribution* of household income in Chino Hills in 1989 is illustrated in Table H-8 as determined from the census. (The of households which fall in each income category reflect the City's 1993 household count). The majority of the City's population (56%) earned in excess of \$50,000. Only 12 percent earned less than \$24,999.

Table H-8
City of Chino Hills
Household Income Distribution: 1989/1993

	Under \$10,000	\$10,000 - \$14,999	\$15,000 - \$24,999	\$25,000 - \$34,999	\$35,000 - \$49,999	\$50,000- \$74,000	\$75,000 +	Total House- holds
% of Total Households(a)	3%	2%	7%	12%	20%	32%	24%	100%
Number of Households(b)	446	297	1,041	1,784	2,974	4,758	3,569	14,- 869

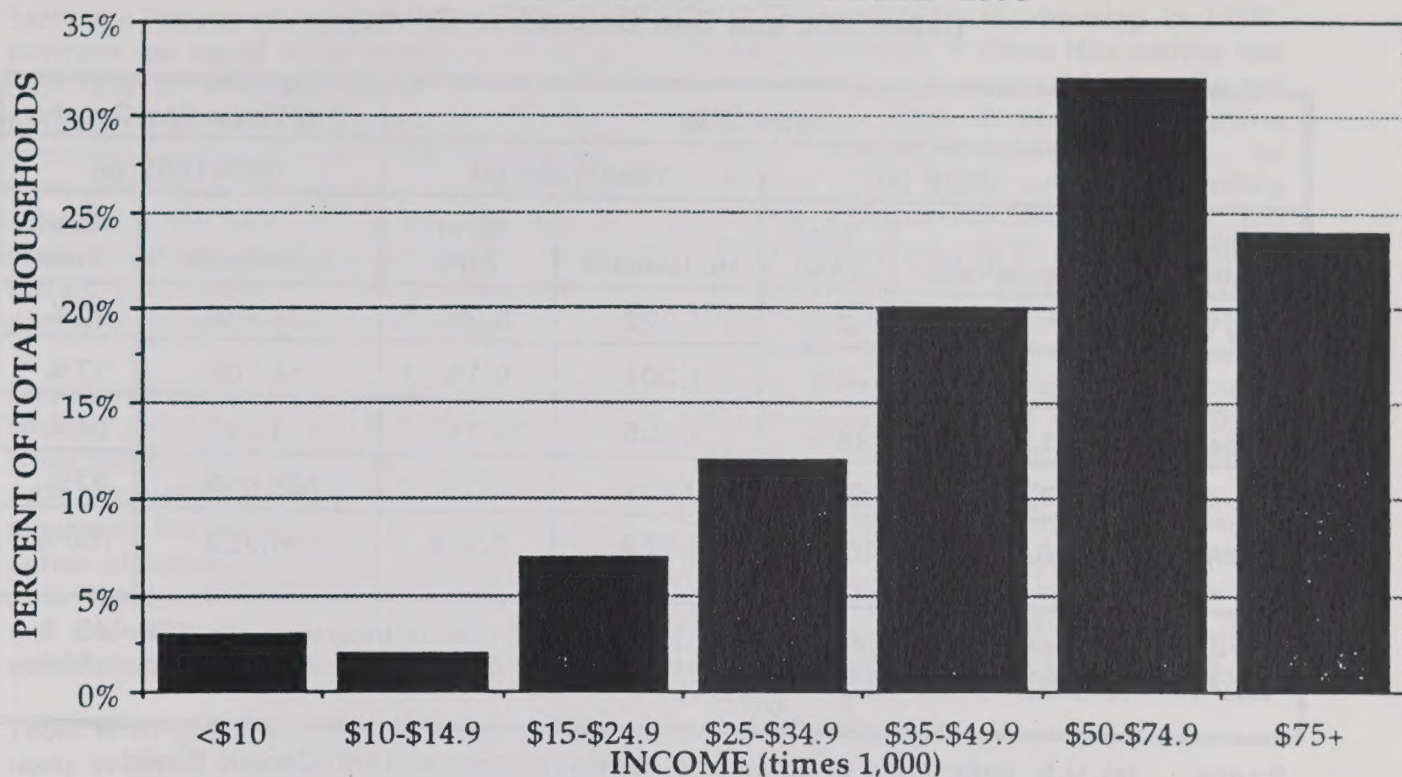
Source: (a) Distribution of 1989 household income from U.S. Department of Commerce, Bureau of Census, 1990 Census Report.

(b) Household counts are obtained by applying 1989 income distribution from the 1990 Census to the City's 1993 estimate of households.

The Department of Housing and Urban Development (HUD) and the State Department of Housing and Community Development (HCD) have developed the following income categories and their definitions; 1989 income limits are indicated in parenthesis:

- Very Low Income - less than 50 percent of the County median (less than \$16,722)
- Moderate Income - between 81 and 120 percent of the County median (\$26,755 - \$40,132)
- Upper Income - greater than 120 percent of the County median (\$40,132 +)
- Low Income - between 51 and 80 percent of the County median (\$16,723 - \$26,754)

CITY OF CHINO HILLS HOUSEHOLD INCOME: 1993



The City's 1979 and 1989 income distributions can be divided into these four income categories through interpolation, as presented in Table H-9. Chino Hills has experienced a proportional decrease in Very Low and Moderate Income households, and a proportional increase in Low and Upper Income households during the 1979-1989 period. Moderate Income households have experienced the greatest proportional change of any group, comprising 28 percent of the City's 1979 households as compared with 15 percent in 1989. Very Low Income households have decreased, from 8 percent in 1979 to 6.2 percent in 1989, although still representing a numerical increase in approximately 600 households between 1980-1993. The relative proportion of Low Income households has also increased during this period.

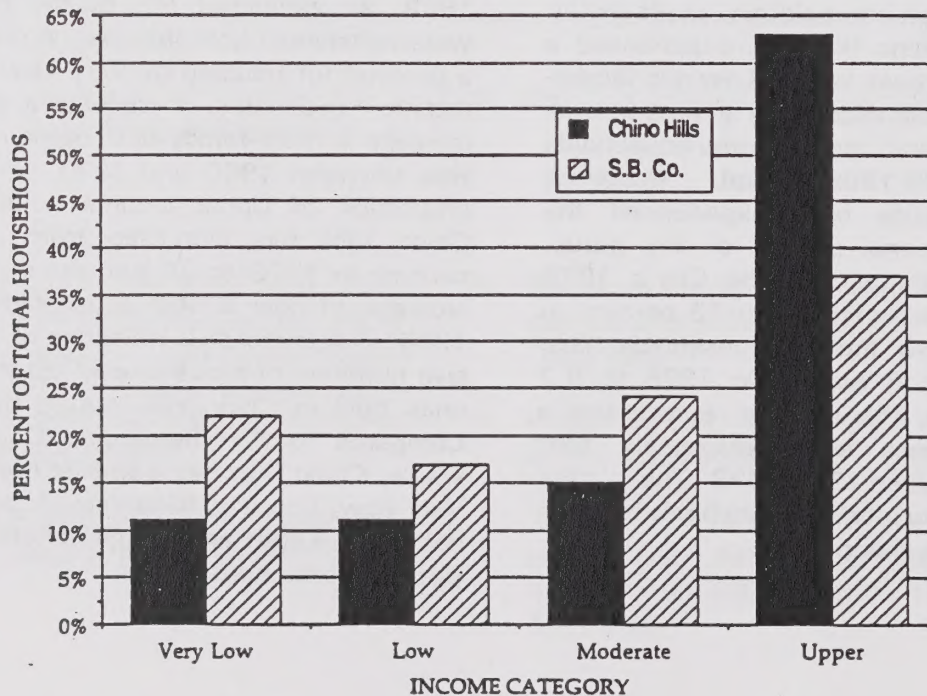
In 1980, Low Income households comprised four percent of the City's households and by 1989, an estimated 8% of the population were considered Low Income. In response to a demand for housing by Very Low and Low income households, there was a significant increase in multi-family development in Chino Hills between 1980 and 1990. Finally, the proportion of Upper Income households in Chino Hills has increased from about 60 percent in 1979 to 70 percent in 1989, an increase of over 8,000 households through 1993. This increase is reflective of the extensive numbers of move-up and estate housing units built in Chino Hills during the 1980s. Compared to San Bernardino County as a whole, Chino Hills has a smaller proportion of Very Low, Low and Moderate Income households, and a substantially greater proportion of Upper Income households.

Table H-9
HUD Income Groups
Chino Hills and San Bernardino County

Year	Chino Hills				San Bernardino County	
	1979 (a)		1989/1993 (b)		1989/1993 (b)	
Income Category	Households	% of Total	Households	% of Total	Households	% of Total
Very Low	319	8%	922	6.2% ↑	108,846	22%
Low	160	4%	1,204	8.1% ↑	84,108	17%
Moderate	1,116	28%	2,335	15.7% ↓	118,740	24%
Upper	2,393	60%	10,408	70% ↑	183,059	37%
TOTAL	3,988	100%	14,869	100%	494,753	100%
1979 median County Income: \$17,463 1989 median County Income: \$33,443 1979 median Chino Hills Income: \$23,981 1989 median Chino Hills Income: \$54,-610						

Source: (a) U.S. Department of Commerce, Bureau of Census, 1980 Census Report
 (b) The distribution of 1989 household income from the census has been applied to the 1993 City and County household count, for consistency throughout the Housing Element.

1993 HUD INCOME GROUPS:
CHINO HILLS AND SAN BERNARDINO CO.



Housing Affordability

State and Federal standards for housing overpayment are based on an income-to-housing cost ratio of 30% and above. Households paying greater than 30 percent have limited remaining income for other necessities such as food, clothing, and health care. Upper Income households are generally capable of paying a larger proportion of their income for housing; therefore, estimates of housing overpayment generally focus on lower income groups.

Distinguishing between renter and owner housing overpayment is important because, while homeowners may over-extend themselves financially to afford the option of home purchase, the owner always maintains the option of selling the home. Renters, on the other hand, are limited to the rental market and are generally required to pay the rent established in that market.

Table H-10 presents information on households in Chino Hills which paid greater than 30% of their income on housing in 1990, and translates this to total 1993 households. (The 1990 Census data were used to assess the extent of housing overpayment. Renter housing costs include both contract rent and utility costs. Owner housing costs include monthly mortgage or similar payments, property taxes, fire and other insurance, and utilities). Percentages contained in Table H-10 reflect the total number of households within that particular income category.

Overall, an estimated 6,261 households overpay for housing in Chino Hills, representing 42

percent of the City's total households. In comparison, only 33 percent of the County's households overpaid for housing in 1990. Among households in Chino Hills earning less than \$10,000, 51% overpaid for housing and approximately 85% of households earning between \$10,000-\$19,999 overpaid. An additional 1,502 (63%) households earning between \$20,000-\$34,999 overpaid, and 1,511 households (or 50%) of the households with annual incomes within the \$35,000-\$49,999 range overpaid. Lastly, only 29% of households (2,390) with incomes above \$50,000 overpaid. The large proportion of households overpaying for housing is largely reflective of the significant number of renter households in these income categories. As incomes increase above \$35,000, a much larger number of owner households are represented. The significant number of owner households earning between \$35,000-\$49,000 overpaying for housing indicates many of these owners have financially over-extended themselves.

The income distribution presented in Table H-10 can be broken down into very low and low income categories through interpolation. Chino Hills had a total of 1,684 lower income households overpaying for housing, of which 435 are Very Low Income (See Table H-11). The majority of households overpaying were Very Low and Low Income renter households with 237 and 659 households overpaying, respectively. In comparison, 198 Very Low Income owner households paid more than 30 percent of their income on housing.

Table H-10
City of Chino Hills
Housing Overpayment: 1993

Income/Cost	Total Households Overpaying		Owner	Renter
	#	% of Households in Income Category	#	#
Less than \$10,000, Spent 30% or more	227	51%	122	105
\$10,000 - \$19,999 Spent 30% or more	631	85%	232	399
\$20,000 - \$34,999 Spent 30% or more	1,502	63%	789	713
\$35,000 - \$49,999 Spent 30% or more	1,511	50%	1,349	162
\$50,000 and above Spent 30% or more	2,390	29%	2,346	44
Total	6,261	42%	4,838	1,423

Source: 1993 household figures are obtained by applying proportions of overpaying households contained in the 1990 Census to 1993 household estimates.

CITY OF CHINO HILLS
PERCENT HOUSEHOLDS
OVERPAYING FOR HOUSING

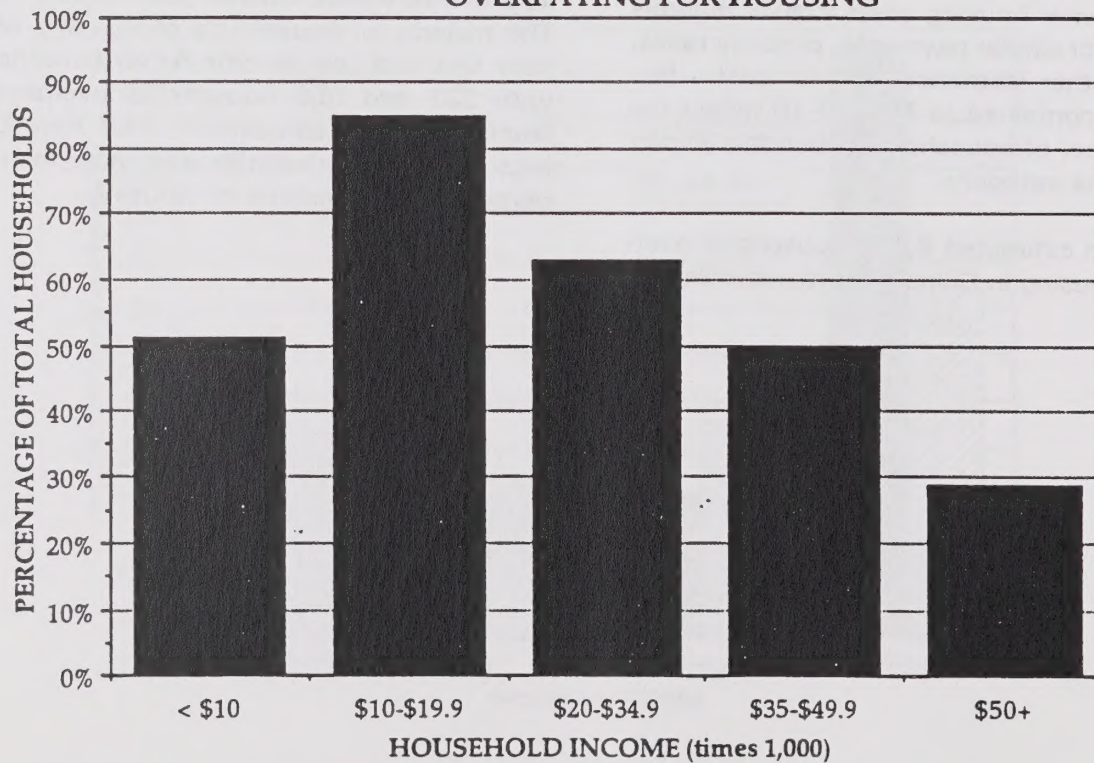


Table H-11
City of Chino Hills
Very Low and Low Income Household Overpayment:
1993

	Total		Owner		Renter	
	#	% of Total Overpaying Households	#	% of Total Overpaying Households	#	% of Total Overpaying Households
Very Low Income Households Spent 30% or More	435	7%	198	3%	237	4%
Low Income Households Spent 30% or More	1,249	20%	590	9%	659	11%
Total	1,684	27%	788	12%	896	15%

Source: 1993 household overpayment figures are obtained by applying proportion of overpaying households contained in the 1990 Census to 1993 household estimates.

Special Needs Groups

Certain segments of the population may have more difficulties in finding decent, affordable housing due to special circumstances. These "special needs" groups include the elderly, large families, disabled persons, female-headed households, farmworkers, and the homeless, and are required under State law to be addressed in the Housing Element. The number of special needs households (or persons) in Chino Hills is summarized in Table H-12. These groups are discussed individually below:

Elderly: The special needs of many elderly households result from their limited, fixed incomes, physical disabilities and dependence needs. An estimated 1,182 elderly households reside in Chino Hills in 1993, constituting only eight percent of the City's households. In comparison, the elderly households comprise 19 percent of total households in San Bernardino. Less than one percent of the City's elderly households are reported to live in poverty, indicating that many of the City's elderly may be able to afford adequate housing without assistance.

A number of existing housing programs address the housing needs of the City's lower income elderly. According to the County, elderly households have been the primary recipients of housing rehabilitation assistance in Chino Hills and, in addition, of the 89 Chino Hills households who receive Section 8 rental assistance, 55 are elderly households. Housing needs of the City's elderly will continue to be addressed through housing policies and programs for housing rehabilitation assistance and rental subsidies.

Large Households: Large households are identified in State housing law as a group with special housing needs based on the generally limited availability of adequately sized, affordable housing units. Large households are often of lower income, frequently resulting in the overcrowding of smaller dwelling units and in turn accelerating unit deterioration related to overuse of household spaces and utilities (showers, toilets), and general deterioration of the structure.

Table H-12
City of Chino Hills Needs Groups: 1993

Needs Group	1993 Number of Households/Persons	Total % of Households/Persons
A. Elderly (65 +) (Households)	1,182	8%
B. Large Households	2,403	16%
C. Disabled (Persons)	872	2%
D. Female-Headed Households With Children	1,021 716	7% 5%
E. Farmworkers (Persons)	436	1%
F. Homeless (Persons)	0	0

Source: 1993 figures are obtained by applying proportions contained in the 1990 Census to the City's 1993 household estimate.

An estimated 2,403 Chino Hills households had five or more members in 1993, representing 16 percent of the City's total households. The substantial number of large family households is reflective of the City's growing Asian/Pacific Islander and Hispanic origin populations who tend to have larger and extended families. While large families traditionally experience housing needs related to their lower incomes, large family households in Chino Hills are predominately upper income and are adequately housed in the City's larger single-family homes. However, the Los Seranos area does contain large households where overcrowding is a problem and the Housing Element addresses this issue by supporting the County's Rehabilitation Program which gives priority to overcrowded households for rehabilitation assistance.

Disabled: Physical handicaps can hinder access to housing units of conventional design as well as limit the ability of handicapped individuals to earn an adequate income. The proportion of handicapped/disabled individuals

is increasing nationwide due to overall increased longevity and lower fatality rates. An estimated 872 Chino Hills residents had disabilities in 1993, comprising two percent of the City's population. Of these 872 residents, 394 persons had work disabilities.

Housing opportunities for the handicapped can be addressed through the provision of affordable, barrier-free housing. This Housing Element sets forth policies to implement State standards for the provision of handicapped accessible units in new developments and, in addition, to encourage housing which is provided for the handicapped to be in close proximity to public transportation and services. Housing Element programs and policies call for rehabilitation assistance to be targeted towards disabled renters and homeowners for unit modifications to improve accessibility.

Female-Headed Households: Single-parent households require special consideration and assistance because of their greater need for day care, health care, and other facilities.

Female-headed households with children in particular tend to have lower incomes, thus limiting housing availability for this group. In 1993, Chino Hills has an estimated 1,021 female-headed households, 716, or 70% with children by the census. Of these female-headed households, only two percent are reported to live in poverty.

An issue affecting all family households, especially those headed by females, is finding quality, affordable childcare. Many households find this a severe constraint, and in the case of single parent household, the parent becomes unable to work. As a result, the parent can not provide basic necessities, such as food and housing to their children.

To address the housing affordability needs of Chino Hills's female-headed households, the Housing Element provides for continued use of existing affordability programs, such as rent subsidies. Housing opportunities for female-headed households with children are addressed through policies for the provision of affordable childcare, and for the location of family housing sites in close proximity to commercial uses.

Farmworkers: The special housing needs of many agricultural workers stem from their low wages and the insecure nature of their employment. Estimates of the "farmworker" population in the City are extrapolated from individuals who categorize their employment as "Farming, Fishing, and Forestry" in the 1990 Census. This category also includes people who work in such non-agricultural fields as veterinary services, landscape and horticultural, forestry, agricultural services, fishing, hunting, and trapping. Based on this grouping, the 1993 estimate for Chino Hills's "farmworker" population is 436, or less than 1% of the City's total population. These

individuals can generally find adequate housing in Chino Hills due to the variety of housing available within the community. Because of Chino Hills urban setting and nominal rural farmworker population, the demand for housing generated by farmworkers in Chino Hills can be addressed through overall programs for affordability.

Homeless: Throughout the country, homelessness has become an increasingly reported problem. Factors contributing to the rise in homelessness include the general lack of housing affordable to low and very low income persons, increases in the number of persons whose incomes fall below the poverty level, reductions in public subsidies to the poor, and the de-institutionalization of the mentally ill.

The 1990 Census reported no homeless persons in Chino Hills. In addition, interviews with City staff and the Chino Hills Police Department/Sheriff's Office indicate that no homeless persons have been sighted within the City. The City's fairly remote location has served as a detraction to homeless.

The San Bernardino County Homeless Coalition (West End) has been formed to address homeless issues for the western portion of the County. The coalition serves as a forum where non-profits, community leaders, and City representatives can exchange ideas about homeless services and facilities. The coalition is currently working to locate transitional housing in western San Bernardino County, most likely in the City of Ontario.

A number of homeless facilities and service agencies are located in the subregion, with the majority concentrated in the City of Pomona. Table H-13 lists facilities available in the subregion.

**Table H-13
Regional Homeless Facilities**

Agency	Target Groups	# Beds	Facility/Service
St. Marks, Upland	Homeless	2 apartments can house 7 families	Transitional Housing, Case Management, Emergency Shelter
Questward Foundation, Ontario	All	20 Beds	Long term shelter for men, women, children, and families (90 days to two years). Food, shelter, job training and counseling.
House of Ruth, Claremont	Homeless/Economically disadvantaged, battered women and their children	20	Shelter, food, individual and group counseling, emergency transportation, legal and social advocacy, and 24-hour hotline services, includes job/rental info.
Church of Christ, Pomona	Homeless single men and rental assistance to families	7	Shelter, food, clothing, transportation, job preparation and a savings plan.
Pomona Women's Fellowship Home Site, Pomona	Homeless, abuse or battered women	7	Shelter, clothing, food, life-skills training and job preparation
Pomona Neighborhood Center, Inc., Pomona	Any	None	Shelter for single men and women during cold/ wet weather program (Nov. to March)
Pomona Valley Council of Churches (PVCC), Pomona	Singles with children, families, and single women	22 beds per night	Emergency shelter (30-day), clothing, case management, child care & job preparation training. Limited rental & utility assistance.
Chicano Service Action Center, Chicano Family Services, Pomona	Families or single women	12	Emergency shelter, food, clothing, furniture, and job training
Bienvenidos Children Center, Inc.	Children 3 years or younger who are victims of abuse/neglect or abandonment	43	Emergency shelter

Source: San Bernardino County Homeless Coalition, June 1993.

City of Pomona, CHAS, October 1991. County of Los Angeles, CHAS, 1991.

The Housing Element calls for the City to coordinate with existing social service providers from surrounding communities to address the needs of the area's homeless population. In particular, the City will support San Bernardino County Homeless Coalition's efforts to coordinate homeless services.

C. HOUSING STOCK CHARACTERISTICS

A housing unit is defined as a house, apartment, or a single room, occupied as a separate living quarters or, if vacant, intended for occupancy as a separate living quarters. Separate living quarters are those in which the occupants live and eat separately from any other persons in the building and which have direct access from the outside of the building

or through a common hall. A community's housing stock is the compilation of all its housing units.

Housing Growth

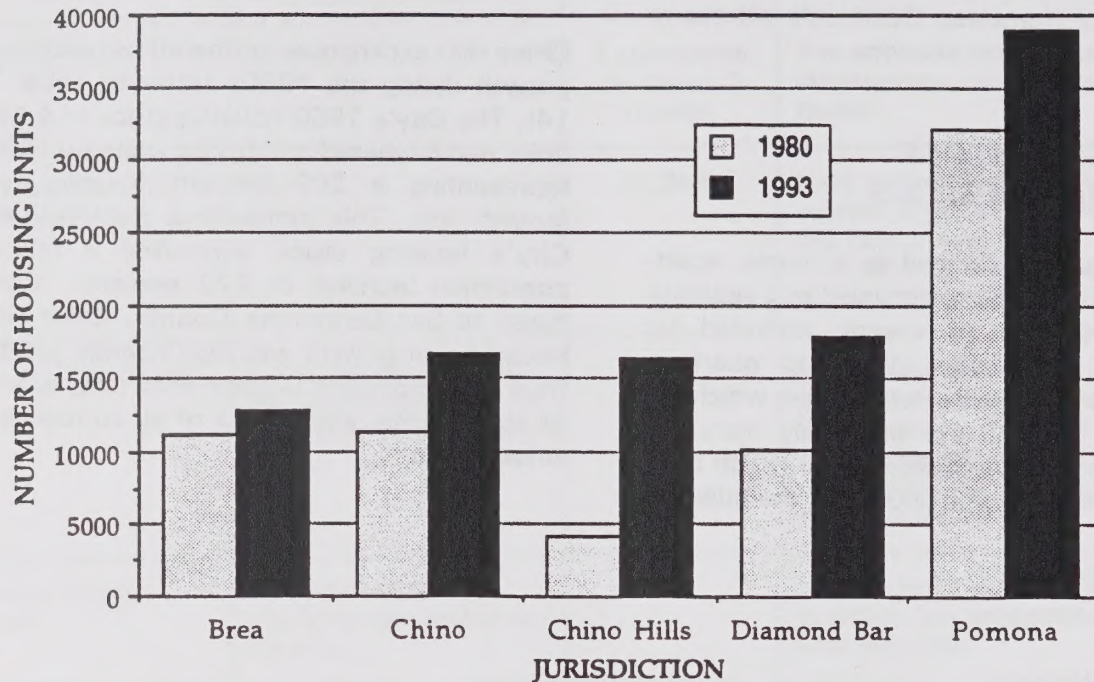
Chino Hills experienced tremendous residential growth during the 1980s (refer to Table H-14). The City's 1980 housing stock of 4,188 units had increased to 16,286 units by 1993, representing a 289 percent housing unit growth rate. This tremendous growth in the City's housing stock supported a related population increase of 273 percent. Compared to San Bernardino County, Chino Hills housing unit growth was significantly greater than the 55 percent County-wide rate, as well as significantly above that of all surrounding jurisdictions.

**Table H-14
Housing Trends
Chino Hills and Surrounding Areas 1980 & 1993**

Jurisdiction	Number of Housing Units		% Increase
	1980 (a)	1993 (d)	
Brea	11,203	12,815	14%
Chino	11,372	16,640	46%
Chino Hills (b)	4,188	16,286	289%
Diamond Bar	10,153 (c)	17,813	75%
Pomona	32,153	38,948	21%
San Bernardino County	370,155	572,379	55%

Source: (a) U.S. Department of Commerce, 1980 Census Report.
 (b) Based on inventory of City's housing stock conducted in May 1993.
 (c) City of Diamond Bar General Plan, July 1992.
 (d) State of California, Department of Finance, Estimate for January 1993.

HOUSING UNIT TRENDS: 1980 & 1993



Housing Type and Tenure

Chino Hills' housing stock almost quadrupled between 1980 and 1993, as large tracts of housing units were constructed throughout the City. Between 1980 and 1993, single-family units increased by 260% (from 3,553 to 12,790 units). The City had very few multi-family units in 1980 (157 units). As the City's overall population continued to grow, the City's housing market responded by providing a wider range of housing types. By 1993, the number of multi-family units increased to 2,881 units. Multi-family housing provides an affordable housing option to the City's increasing lower income population. Mobile homes also continued to provide affordable housing opportunities to community residents with an estimated 478 units in 1980

and 615 in 1993. According to the Department of Finance 1993 estimate, the overall vacancy rate in Chino Hills is estimated at 8.7 percent, well below the 13.5 percent rate evidenced County-wide.

In 1980, the City had an exceptionally high rate of owner-occupied housing (87% owners and 13% renters). In 1993, 11,954 (80%) of the City's occupied housing units are occupied by owners and the remaining 2,915 units (20%) are renter-occupied (refer to Table H-16). This shift in proportional breakdown is a predictable pattern for a growing community. Overall, the City's housing stock is still primarily comprised of ownership units. In comparison, the County's 1990 housing stock was comprised of approximately 63% ownership units.

**Table H-15
Housing Unit Mix: 1980 & 1993**

Housing Type	# of Housing Units		Change 1980-93	
	1980(a)	1993 (b)	Number	Percent
Single-Family (Attached & Detached)	3,553	12,790	9,237	260%
Multi-Family	157	2,881	2,724	1,735%
Mobile Homes	478	615	137	29%
Total Units	4,188	16,286	12,098	289%
Total Occupied	3,988	14,869 (c)	10,881	273%
Vacancy Rate	5%	8.7% (d)		

Source: (a) U.S. Department of Commerce, Bureau of Census, 1980 Census Report.
 (b) Housing Unit Count, March, 1993.
 (c) Applied the Department of Finance 1993 Citywide vacancy rate (8.7%) to the City's total number of housing units.
 (d) Department of Finance, 1993.

**CITY OF CHINO HILLS
HOUSING UNIT MIX: 1980 & 1993**

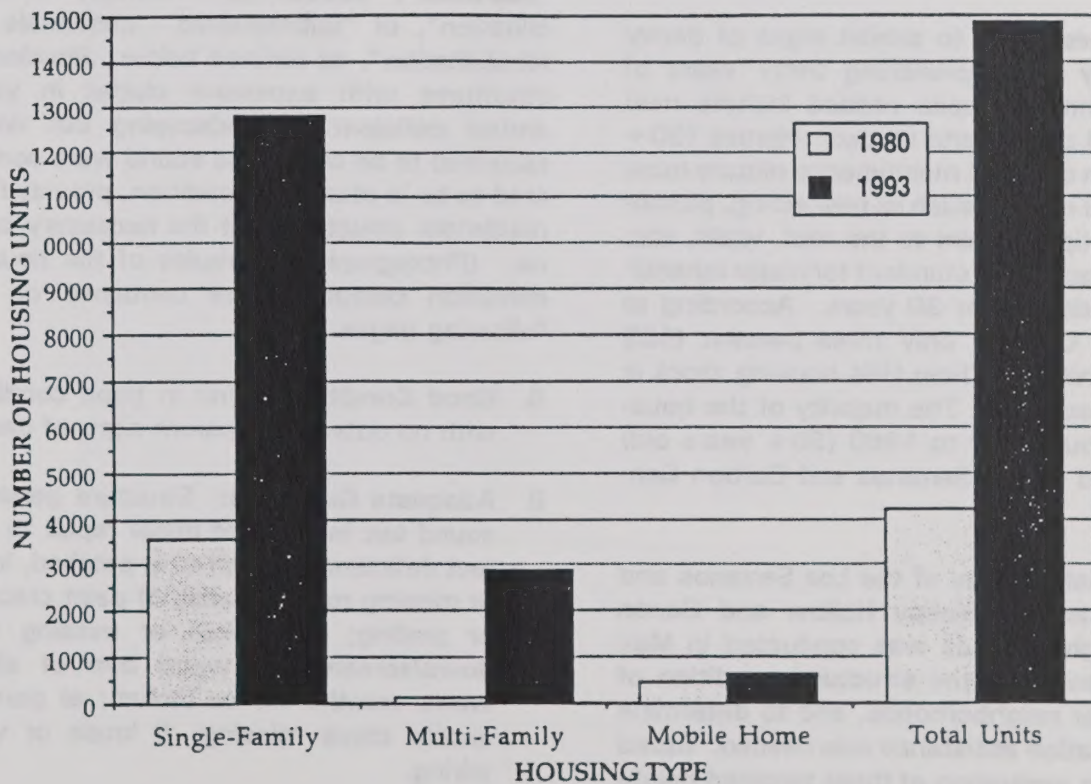


Table H-16
Tenure of Occupied Housing Units: 1993

Housing Type	Owner	% Total Owner	Renter	% Total Renter
Single-Family	10,038	92	1,232	42%
Multi-Family (2-4 du)	40	*	267	9%
Multi-Family (5 + du)	86	1	1,364	47%
Mobile Home	759	6	31	1%
Other	31	*	21	1%
Total	11,954	99%	2,915	100%

Source: 1993 tenure of occupied housing units are obtained by applying proportions contained in the 1990 Census to the 1993 housing unit count.

Note: Percentages do not add up to 100% due to rounding
* = less than 1%.

Age and Condition of Housing Stock

Most homes begin to exhibit signs of decay when they are approaching thirty years of age. Common repairs needed include new roofs, wall plaster and stucco. Homes (30+ years) with deferred maintenance require more substantial repairs, such as new siding, plumbing or multiple repairs to the roof, walls, etc. Thus, the accepted standard for major rehabilitation needs is after 30 years. According to the 1990 Census, only three percent (529 housing units) of Chino Hills housing stock is over 30 years old. The majority of the housing units built prior to 1960 (30+ years old) are located in Los Serranos and Carbon Canyon.

A windshield survey of the Los Serranos and Carbon Canyon (Sleepy Hollow and Canon Lane) neighborhoods was conducted in May 1993 to evaluate the structural condition of these older neighborhoods, and to determine if rehabilitation assistance was needed. Based on exterior evaluation of these targeted neigh-

borhoods, each unit was rated as "good", "adequate", "substandard - suitable for rehabilitation", or "substandard - unsuitable for rehabilitation", as defined below. Residential structures with excessive clutter in yards and/or deficient in landscaping but which appeared to be otherwise sound were considered to be in standard condition, provided the residential structure met the necessary criteria. (Photographic examples of the housing condition categories are contained on the following pages.)

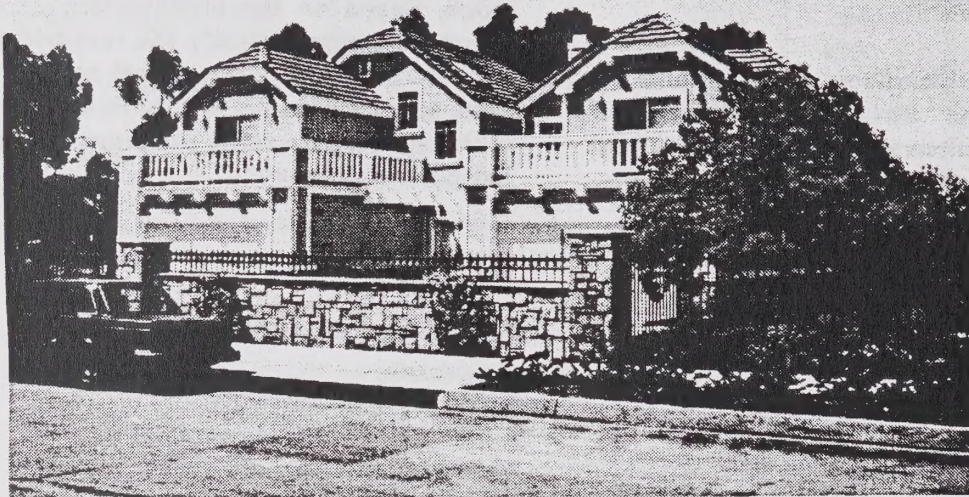
- A Good Condition:** Unit in good condition with no outward apparent signs of decay.
- B Adequate Condition:** Structure generally sound but in need of minor repair to correct deficiencies such as a) patched, loose or missing roof material; b) paint cracking or peeling; c) broken or missing windows/screens; d) wood trim or siding worn, weathered, or broken; e) porches and/or steps missing; f) loose or worn wiring.

- C Substandard Condition, Suitable for Rehabilitation:** Structure contains one or more structural deficiencies such as a) loose protective surface; b) settled porch or roof; c) weakened structure or inadequate building foundation. A building's foundation was determined to be inadequate, if it was cracking, or visibly being uplifted from a tree.
- D Substandard Condition, Not Suitable for Rehabilitation:** Structure contains major structural deficiencies which would cost greater than 50 percent of the home's

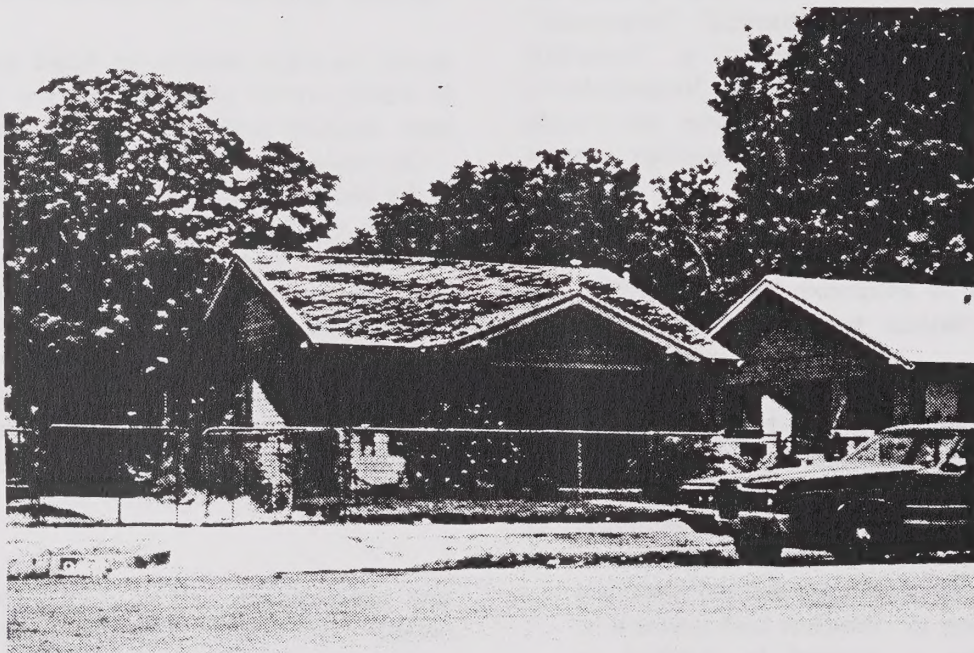
value to repair. Only two housing units in Chino Hills received a rating of "D". These units lacked substantial portions of their roofs, and exterior walls.

Figures H-2, H-3, and H-4 generally depict the results of the housing conditions survey by area. These graphics generalize conditions by block, based on the predominant conditions rating, and also quantify the number of units in each rating category; parcel-specific conditions maps are on file at City Hall. Table H-17 which follows presents the numeric results of the conditions survey.

Examples of Housing Condition Categories:



A. Good Condition



B. Adequate Condition



C. Substandard Condition, Suitable for Rehabilitation



D. Substandard Condition, Not Suitable for Rehabilitation

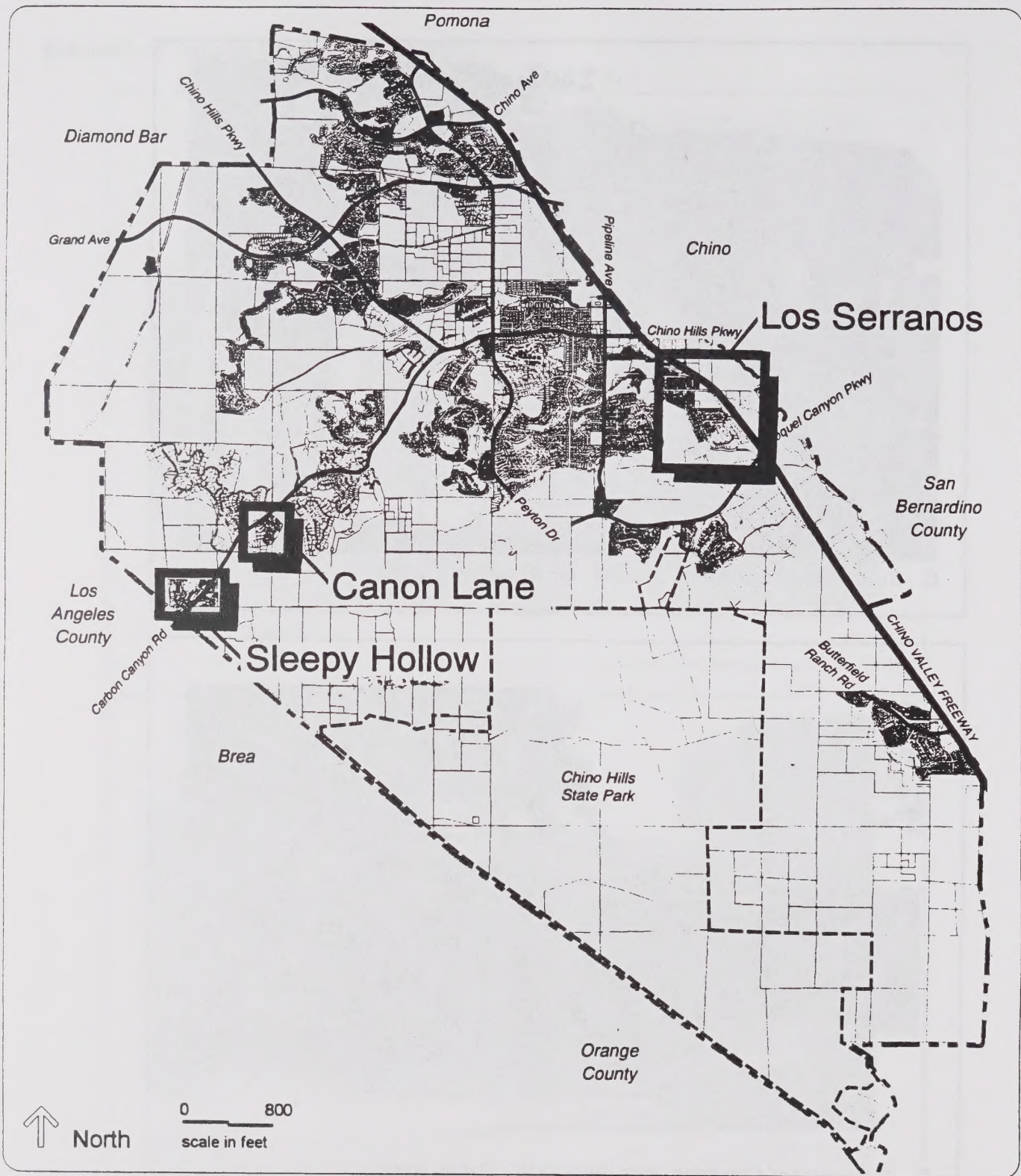
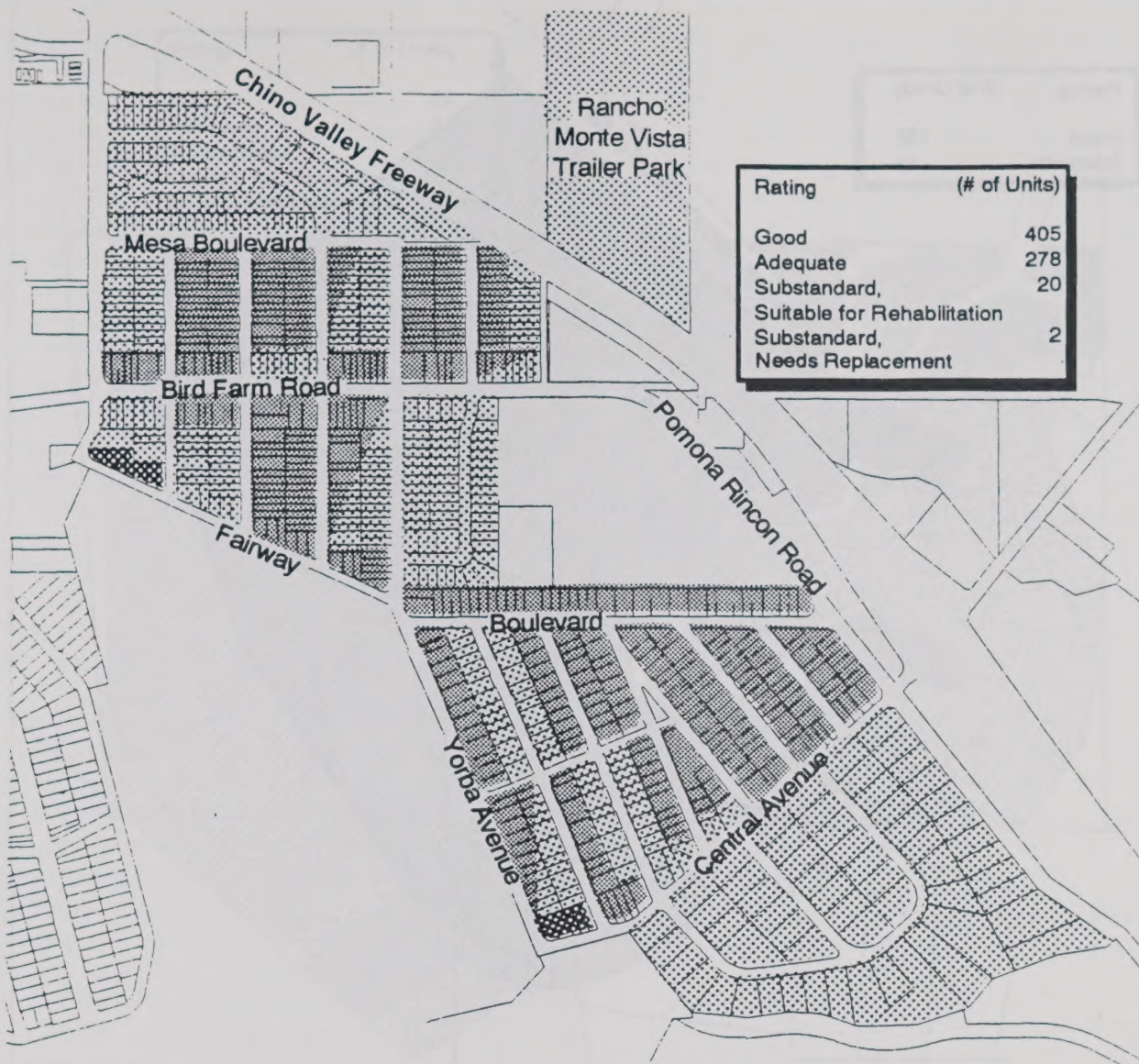


Figure H-1
Housing Conditions Survey:
Map Key



Rating



Good



Adequate



Substandard, Suitable For Rehabilitation



Substandard, Not Suitable for Rehabilitation
(Pattern is not shown on map because this category does not comprise more than 50% of a block)

SOURCE: Cotton/Beland/Associates, 1993.



Block Contains Equal Proportions of Good and Adequate Dwelling Units

Note: Graphic generalizes conditions by block based on predominant conditions rating. Detailed maps are on file at City Hall.



North

0 800
scale in feet

Figure H-2
Housing Conditions Survey:
Los Serranos

Rating	(# of Units)
Good	132
Adequate	14



Rating



Good



Adequate

(Pattern is not shown on map because this category does not comprise more than 50% of a block)

SOURCE: Cotton/Beland/Associates, 1993.

Note: Graphic generalizes conditions by block based on predominant conditions rating. Detailed maps are on file at City Hall.

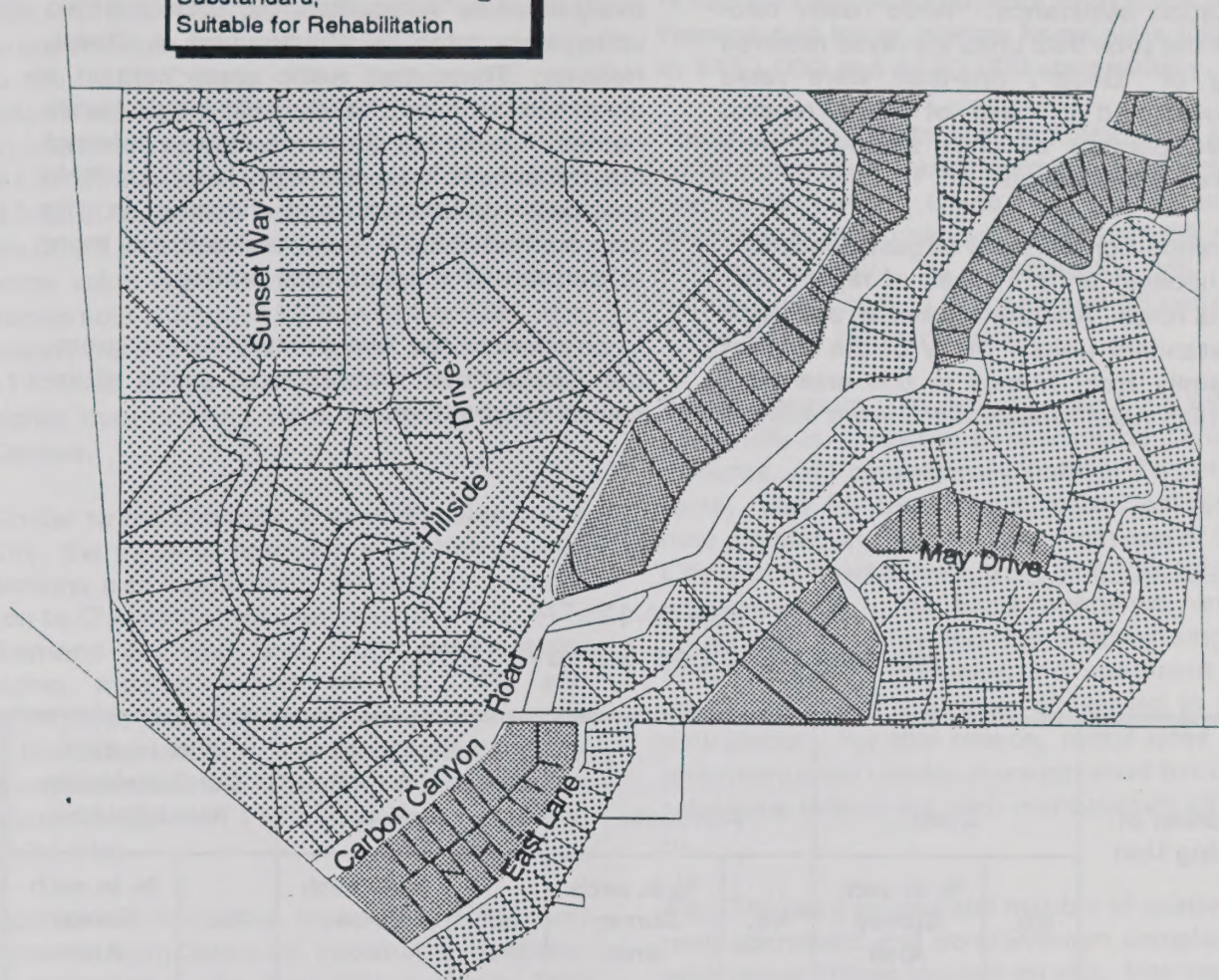


North

0 300
scale in feet

Figure H-3
Housing Conditions Survey:
Canon Lane

Rating	(# of Units)
Good	85
Adequate	24
Substandard, Suitable for Rehabilitation	2



Rating



Good



Adequate



Substandard, Suitable for Rehabilitation
(Pattern is not shown on map because this category
does not comprise more than 50% of a block)

SOURCE: Cotton/Beland/Associates, 1993.

Note: Graphic generalizes conditions by block based on predominant conditions rating. Detailed maps are on file at City Hall.



North

0 400
scale in feet

Figure H-4
Housing Conditions Survey:
Sleepy Hollow

The conditions survey confirmed that some of the units in Los Serranos, Sleepy Hollow and Canon Lane areas are in need of varying degrees of upgrading, and are suitable for rehabilitation assistance. While nearly two-thirds of the total 962 units surveyed received a rating of "Good", one-third were rated "Adequate" and in need of minor repairs. Only two percent of units surveyed were considered substandard.

Los Serranos contains the largest concentration of housing units in need of repair, with 278 units rated "Adequate", and an additional 22 substandard units. Many of the modest single-family tract homes in this area have roofs which need replacement, worn siding

and trim, and peeling exterior paint. The Sleepy Hollow, and to a lesser degree Canon Lane, neighborhoods contain housing units in need of repair, with 24 and 14 units respectively rated as "Adequate". An additional two units were rated as substandard in Sleepy Hollow. These two rustic areas contain a diverse mix of individually built single-family homes. Unlike Los Serranos, where deferred maintenance is likely related to low household incomes, undermaintained housing in the canyon and hillside neighborhoods is more reflective of the area's rural setting.

In addition to the two primary survey areas, the City's three mobile home parks all received a "good" rating.

Table H-17
Housing Condition Survey: 1993

Condition of Housing Unit	Good		Adequate		Substandard Suitable for Rehabilitation		Substandard Not Suitable for Rehabilitation	
	No.	% in each Survey Area	No.	% in each Survey Area	No.	% in each Survey Area	No.	% in each Survey Area
Survey Area								
Los Serranos	405	57%	27-	40%	20	3%	2	-
Sleepy Hollow	85	76%	8 -	22%	2	2%	0	
Canon Lane	132	90%	24	10%	0	--	0	-
			14					
Total	622		316		22		2	

Source: Cotton/Beland/Associates, Housing Conditions Survey, May 1993.

Housing Costs

Ownership Housing: The value of homes varies substantially within the City of Chino Hills. Chino Hills' homes have an estimated overall median value of \$228,647, according to the 1990 Census. The Census also provides a more detailed breakdown of the median value of homes in the Los Serranos CDP (\$137,300) and the Chino Hills CDP (\$245,800), which are both included within the City's jurisdictional limits. This disparity in home value is confirmed through a search of homes sold (August 1992) in Chino Hills. The search reports a median home sales price of \$146,000 in the Los Serranos area, slightly higher than housing value as reported by the Census.

Similar to the disparity in housing value in the City, the value of homes in surrounding jurisdictions also significantly differs. In comparison to Chino Hills' median value at \$228,647, Diamond Bar and Brea report substantially higher median values at \$272,900 and \$264,000, respectively. The value of homes in the cities of Chino and Pomona is generally lower than in Chino Hills. Chino has a median home value of \$172,200, and Pomona, \$134,200.

Additional information on housing prices was obtained from Dataquick Information Systems, as published in the April 25th and May 16th 1993 Los Angeles Times (Please see Table H-18). The data includes sales of new and existing detached single-family homes and condominiums sold by home builders, real estate agents, and homeowners. Sales data is presented by zip code, which generally approximates the jurisdictional boundaries of the cities listed.

As illustrated in Table H-18, the median selling price in March 1993 for single family homes in the 91709 Chino Hills zip code was \$180,000, and \$145,000 for condominium units. (A small portion of the City falls outside this zip code.) The City of Diamond Bar was the only surrounding community which

reported a higher median home sales price (\$238,000) in February 1993. However, Diamond Bar's median condominium sales price was \$19,000 less than Chino Hills (\$126,000 versus \$145,000) Both Chino and Pomona had lower median home sales prices at \$152,000 and \$130,000, respectively.

The number of units sold in Chino Hills and surrounding areas varied dramatically during a one month period. Chino Hills and Diamond Bar reported the most units sold with 66 and 67, respectively. In comparison, only 15 housing units sold in Pomona and 36 units in Chino during this time frame.

Rental Housing: The rental housing market in Chino Hills is comprised of apartments, condominiums, and single-family homes. To obtain rental rates for these units, issues collected over a period of three months from one of the City's local newspapers, the Chino Hills News, was reviewed. The paper contained rental information for three and four bedroom single-family homes. However, no apartment or condominium rentals were advertised in the newspaper. For this reason, rental rates for apartments and condos were obtained through telephone interviews with management offices.

The City has a substantial number of relatively new apartment and condominium complexes with rental offices located on site. Interviews with these management companies indicate that one bedroom apartment units rent between \$660-\$740, and two bedroom apartments rent between \$715-\$860. Three bedroom rents range from \$905 to \$950. Condominiums have slightly higher rental rates than apartments with rents ranging between \$730-\$855 for one bedroom units and \$860 to \$945 for two bedroom units.

As advertised in the Chino Hills News, rents for three bedroom homes ranged from \$750 to \$1,450 with a median rental rate of \$995. Four bedroom single-family homes rented from \$1,300 to \$1,450.

According to HUD income guidelines, a four person household classified as Very Low Income earns up to \$20,550 annually, whereas a four person Low Income household could earn up to \$32,900. Based on Federal and state guideline that households should not spend more than 30 percent of their gross income on housing, inclusive of utility costs, Very Low Income households can afford to

pay up to \$514 in monthly housing costs and Low Income households can afford to pay a maximum of \$823 monthly. As is typical in most communities, Very Low Income households are priced out of the rental market in Chino Hills. However, Low Income households in Chino Hills can afford one and two bedroom apartments and some three bedroom homes.

Table H-18
Housing Sales Prices: Chino Hills and Surrounding Areas
February 1993

Jurisdiction	Zip Codes	Medium Price Home	Medium Price Condo	Units Sold February/March 1993	
				1993	1994
Chino	91710	\$152,000	-	36	42
Chino Hills	91709	\$180,000	\$145,000	66	59
Diamond Bar	91765	\$238,000	\$126,000	67	62
Pomona	91768	\$130,000	-	15	14

Source: Los Angeles Times, May 16, 1993, Dataquik Information Systems

Table H-19
City of Chino Hills
Rental Units by Unit Type: 1993

Price Range	
Apartments:	
1 Bedroom	\$660-\$740
2 Bedroom	\$715-\$860
3 Bedroom	\$905-\$950
Condominium Rentals:	
1 Bedroom	\$730-\$855
2 Bedroom	\$860-\$945

Source: Green Valley Apartments, Portofino Apartments, Summit Apartments, and Eagle Canyon Condominiums

D. ASSISTED HOUSING AT RISK OF CONVERSION

State law requires the City to identify, analyze and propose programs to preserve housing units that are currently deed restricted to low income housing use and will possibly be lost as low-income housing as these deed restrictions expire. This section identifies those units in Chino Hills, analyzes their potential to convert to non-low income housing uses and analyzes the costs to preserve and/or replace those units. Goals, policies and programs to preserve these units are presented later in this Housing Element.

Consistent with State requirements, the assisted housing analysis includes the following components:

- An inventory of restricted low income housing projects in the City and their potential for conversion;
- An analysis of the costs of preserving and/or replacing the units "at risk" and a comparison of these costs;
- An analysis of the organizational and financial resources available for preserving and/or replacing the units "at risk";
- Quantified objectives for the number of "at risk" units to be preserved; and
- Programs for preserving the "at risk" units. (See Program 6 in Section VI.)

Inventory of At-Risk Housing

This section identifies all of the low income rental housing units in the City of Chino Hills that are at risk of converting to market rate housing uses between July 1, 1994, and July 1, 2004.

The inventory of assisted units included a review of all multi-family rental units assisted under federal, state and/or local programs, including HUD programs, state and local bond

programs, redevelopment programs, and local in-lieu fees, inclusionary, density bonus, or direct assistance programs. The inventory also covers all units that are eligible to change to non-low income housing units due to termination of subsidy contract, mortgage prepayment, or expiring use restrictions. The inventory was compiled by interviews with City and County staff, HUD, and review of "Inventory of Federally Subsidized Low-Income Rental Units at Risk of Conversion" (California Housing Partnership Corporation), and "The Use of Housing Revenue Bond Proceeds - 1990", (California Debt Advisory Commission).

Description of At-Risk Projects: Two County multi-family mortgage revenue bond projects in Chino Hills - Woodview and Rolling Ridge - are at risk of converting from low-income use to market rate during the 1994-1999 Housing Element cycle. Under the multi-family bond program, developers are provided preferential financing for new construction in exchange for restricting 20 percent of the units in a project for low-income use. Projects developed prior to the 1986 Tax Reform Act are required to maintain affordability controls for a minimum of ten years. Projects built after this time must restrict units for 15 years.

Woodview is a 440 unit apartment project with low-income restrictions on 92 units. The unit mix of these 92 units is 21 studios, 43 one-bedroom units, and 28 two-bedroom units. The earliest potential conversion date for Woodview is in May, 1998.

Rolling Ridge Apartments contains 110 units, of which 22 have low-income restrictions. All 22 low-income units have two bedrooms. The project's potential conversion date is March 1997.

Conversion Potential: The primary economic incentive to convert low-income units to market rate is the ability to charge higher rents. In Chino Hills, the difference between the rental rates of market rate and low-income units under the bond program is relatively minor (see Table H-20). Market rate studios

Table H-20
Comparison of Rent Restricted and
Market Rental Rates

Project	Rent Restricted Units			Market Rate Units		
	Studio	One-Bedroom	Two-Bedroom	Studio	One-Bedroom	Two-Bedroom
Woodview	\$515-535	\$576	\$665-\$720	\$525-550	\$620-\$640	\$675-\$760
Rolling Ridge	None	None	\$645-\$690	None	None	\$645-\$690

Source: Telephone interviews with Woodview and Rolling Ridge Apartments, June, 1993.

at Woodview rent between \$525-\$550, one bedroom units between \$620-\$640, and two bedroom units for \$675-\$760. Rent restricted units in Woodview rent between \$515-\$535 for studios, \$576 for one bedrooms, and between \$665-\$720 for two bedrooms. In Rolling Ridge Apartments, rent restricted and market rate units rent between \$645-\$690.

Given these rental rates, there is little monetary incentive for the owners to convert units to market rate, and if there were a conversion, the impacts on low-income tenants would not be significant. However, the low income units in both of these projects are not eligible for conversion until 1998 (Woodview) and 1997 (Rolling Ridge). If an increased demand on the rental market exists at that time, rental rates for these units may increase.

Cost Analysis: A total of 114 multi-family rental units are at-risk of losing their low-income use restrictions during the time-frame of this Chino Hills Housing Element. The following discussion examines both the cost of preserving the units at-risk and the costs of producing new rental housing comparable in size and rent levels to replace the units which could convert. Actual costs involved in each option will depend on the

rental and real estate market at the time the low-income use restrictions on the project expire.

Preservation Costs: Preservation of the low-income units in Woodview and Rolling Ridge can be achieved in three ways: refinance of a new mortgage bond, use of Section 8 rent subsidies, or transfer of ownership to a non-profit or public entity. (See following rent subsidy discussion, and Program #5 for a description of the Section 8 program). The following discussion estimates the costs associated with each of these three options.

Refinance Mortgage Revenue Bond: The most likely option to preserve the low-income use restriction of the 114 low-income units in Woodview and Rolling Ridge Apartments is to refinance both of the mortgage revenue bonds. The County of San Bernardino is currently (1993) refinancing a number of projects in the county. Interest rates of between 3-4 percent are being offered for refinanced bonds. Because these rates are well below those previously offered, project owners have a financial incentive to refinance these bonds and extend low income use restrictions.

If refinanced, Woodview and Rolling Ridge Apartments would be required by the 1986 Tax Reform Act to commit the 20 percent low-income units for the greater of 15 years or as long as the bond is outstanding. The costs to the property owner to refinance each bond would include the difference in interest rates on the remaining debt between the previous and the renegotiated bond packages, an issuance cost which amounts to approximately three percent of the bond (to be paid up front by the City or the County), and administrative costs.

Transfer Ownership: A second preservation option is the voluntary transfer of ownership of Woodview and Rolling Ridge Apartments to a community-based non-profit or government entity. By transferring the ownership to a non-profit housing organization, low-income use restrictions could be extended to the entire project, and the project will become eligible for a greater range of government assistance programs. Given the good condition and relatively young age of these projects, project maintenance costs are likely to be low. In addition, no rehabilitation improvements have been identified as necessary. The cost estimates associated with transfer of ownership follow.

The assessed value of the Woodview Apartments is \$12,520,584 (City of Chino Hills, June 1993). Assuming a 10 percent downpayment of \$1,252,058, the potential buyer of the project will need to secure a mortgage loan of \$11,268,526 for purchase of the entire project. The cost of preserving the 92 low income units to a non-profit housing organization can be assumed at 20 percent of the total, or \$250,412 downpayment and \$2,253,705 mortgage.

The assessed value of Rolling Ridge Apartments is \$3,102,190 (City of Chino Hills, June 1993). Assuming a 10 percent downpayment of \$310,219 for purchase of the entire project, the non-profit organization will need to secure a mortgage loan

of \$2,791,971 for purchase of the entire project. The cost of preserving the 22 low income units can be assumed at 20 percent of the total, or \$62,044 downpayment and \$558,394 mortgage.

Rent Subsidy: When the low-income use restrictions on these bond projects expire, Section 8 rent subsidies can be used as a means of providing continued affordability to very low income tenants. Under the Section 8 rent subsidy program, HUD pays owners the difference between what tenants can afford in rent payments (defined as 30 percent of household income) and what HUD and the local Housing Authority estimate to be Fair Market Rent on the unit. The Woodview Apartment project is not currently listed with the County Housing Authority as accepting Section 8 rent subsidies, although Rolling Ridge Apartments does accept Section 8 subsidies.

Section 8 certificates are only available to very low income households - households earning less than 50 percent of the HUD area median income for San Bernardino County - approximately \$20,550 in 1993. An "average" very low income household actually earns well below the 50% maximum threshold. Thus, for purposes of calculating affordability, 30% of the area median income is utilized, or \$12,330. Under these assumptions, monthly housing costs affordable to Section 8 recipients are estimated to be approximately \$308 (based on HUD's definition of affordable housing costs as 30 percent of gross household income).

According to the San Bernardino County Housing Authority, fair market rent for a studio is \$470, \$555 for a one-bedroom unit, and \$647 for a two-bedroom unit. Thus, the difference between housing costs affordable to very low income households and the fair market rent is \$162 for a studio, \$247 for a one-bedroom unit, and \$339 for a two-bedroom unit. Given the overall unit mix in the Woodview and Rolling Ridge projects of

21 studio apartments, 43 one-bedroom units, and 50 two-bedroom units, the total cost to HUD of subsidizing the rents of the 114 units in these projects is estimated at \$371,676 annually.

Replacement Costs: This section analyzes the cost of constructing new low-income housing units to replace the 92 Woodview and 22 Rolling Ridge units should they be converted from low-income uses. Possible developers include non-profit organizations and private development companies.

The cost of developing new housing depends upon a variety of factors such as density, size of the units (i.e., number of bedrooms), location and related land costs, and type of construction. In general, land costs in Southern California are quite high. The costs provided in the following table reflect a variety of projects, ranging in size from two to five bedrooms and in density from 12 to 25 dwelling units per acre. While the estimates are not specifically tailored to the cost of replacing units at Woodview or Rolling Ridge, they provide an "order of magnitude" reference for estimating these costs.

Table H-21
Multi-Family Unit Replacement Costs

Cost Category	Per Unit Cost Range	Average
Land Costs	\$20,000 - \$30,000/du	\$25,000
Construction Costs	\$50,000 - \$70,000/du	\$60,000
Other (Financing, Architectural, etc.)	\$ 7,000 - \$10,000/du	\$ 8,500
TOTAL PER UNIT	\$70,000 - \$110,000/du	\$93,500

Source: California Housing Partnership

As indicated in Table H-21, the average per unit construction cost is \$93,500 translating to \$8,602,000 to replace the 92 units at Woodview and \$2,057,000 at Rolling Ridge. Not only is this amount substantially higher than the \$371,676 annual cost required to extend rent subsidies to the 114 low income units, new construction costs also well exceed the \$2,812,099 preservation cost and related \$312,456 downpayment under a transfer of ownership scenario.

Cost Comparisons: The above analysis examines the cost of preserving and replacing the 114 multi-family units at-risk of losing their low-income restrictions. Although there are various options, refinancing the mortgage revenue bonds seems the most likely option given the County's existing program and interest in refinancing. The County of San Bernardino is currently refinancing a number of bond projects at interest rates of between 3-4 percent. Because these rates are well below those previously offered, project owners have a financial incentive to refinance these bonds and extend low income use restrictions.

The costs of transferring ownership of a project to a public or non-profit agency are based on the projects' current value, which are typically marked-up to incorporate inflation and profit for the existing owners. In contrast, the costs to refinance an existing bond under the current owners are based primarily on the outstanding debt. Although feasible, transferring ownership at an estimated cost of \$3,124,555 (\$312,456 downpayment and \$2,812,099 mortgage) is a less attractive option to preserve the affordability of the 114 units than refinancing.

An incentive which would further maintain the affordability of these at-risk units are Section 8 subsidies. The cost to preserve the 114 assisted units is approximately \$370,000. However, the waiting list for rent subsidies through the County is three to four years, and the long-term affordability of the units cannot be ensured with this program solely, so that

other financial incentives, such as low refinancing rates, may need to be utilized to make the negotiation packages more attractive to property owners.

As previously discussed, total costs of new construction to replace at-risk units is considerably higher than the costs associated with the different preservation options presented above. Nevertheless, new construction or the acquisition of replacement housing by the City or by non-profit entities would assure the continued affordability of the units, where subsidies can not. The following section discusses resources for preserving or replacing these units.

Resources for Preservation: One of the major factors to be considered in formulating programs to preserve the "at-risk" units is the financial and institutional resources available for such programs. The following provides a brief overview of those resources.

Financing/Subsidy Resources: There are a variety of potential funding sources available for potential acquisition, subsidy or replacement of units at-risk. Due to both the high costs of developing and preserving housing and limitations on both the amount and uses of funds, a variety of funding sources may be required.

CDBG Funds: Through the Community Development Block Grant (CDBG) program, HUD provides funds to local governments for funding a wide range of community development activities. Chino Hills is a participating City in the San Bernardino Urban County CDBG program. In fiscal year 1992/93, Chino Hills received CDBG funds in the amount of \$123,700. Should the need arise to use CDBG funds for housing preservation in the future, a portion of the funds allocated to Chino Hills by the County could potentially be redirected.

HOME Funds: A major new source of federal housing funds are now available under the HOME (Home Investment Partnerships) program. A federal priority for use of these funds is preservation of the at-risk housing stock. Once Chino Hills becomes an "entitlement" jurisdiction, the City can apply to the State for an allocation of up to \$1 million in HOME funds. Until that time, the City is restricted to those programs funded through the County HOME program, which is currently limited to first-time homebuyer programs. (See Program #1 for discussion regarding the City's future entitlement status.)

General Revenues: The City does not currently fund housing programs out of general revenue funds. However, staff time is dedicated to coordinating and administering assistance to County housing programs.

Administrative Resources: An alternative to providing subsidies to existing owners to keep units available as low income housing is for public or non-profit agencies to acquire or construct housing units to replace "at-risk" units lost to conversion. Nonprofit ownership ensures the future availability of purchased units as low-income housing. Several nonprofit agencies in Southern California have expressed interests in purchasing and or managing "at-risk" or replacement units in San Bernardino County.

HomeAid: HomeAid is a non-profit corporation established by the Building

Industry Association of Southern California to help alleviate the homeless problem in the region. The HomeAid program has a dual purpose: to construct or renovate shelters for the transitionally homeless and to develop housing for low and very low income families and individuals. Among the projects completed or in progress in San Bernardino County by HomeAid include: 1) Sports Kids University near Running Springs - refurbishment of 24 structures; 2) St. Mark's Homeless Shelter (in the City of Upland) - construction for rain damaged unit and rehabilitation of a fourplex structure; 3) Single Room Housing - preparation of a revitalization plan for a low-income apartment neighborhood and other affordable housing projects in the City of San Bernardino.

Keystone Affordable Enterprises: Keystone Enterprises is a for-profit group which manages or owns multi-family developments. This group is currently negotiating a number of proposals in San Bernardino County for its management and ownership services.

Quantified Objectives

It is the objective of the City and the County to either retain or replace as low income housing all 114 units scheduled to convert between July 1, 1994 and July 1, 2004. The County has expressed its commitment to preserving these at-risk units through bond refinancing.

III. SUMMARY OF HOUSING NEED

Assuring the availability of adequate housing for all social and economic segments of Chino Hills present and future population is a primary goal of the City. To implement this policy, the City must target its programs and monetary assistance toward those households with the greatest need. This is a summary of the major housing need categories in terms of income groups as defined by Federal and State law. The City recognizes the special status of very low and lower income households, which in many cases are also elderly or single-parent households. City housing programs focus on these households. As summarized in Table H-22, the groups most in need of housing assistance in the near future include the following:

- (1) *New Residents:* The City of Chino Hills has an identified future housing need of 2,200 new housing units for the five year period July 1994-June 1999 translating to an additional 9,100 residents. At least 20 percent of these units should be targeted towards lower income households. Pro-rating this 5-year future growth to the two years remaining between adoption of the City's first Housing Element (July 1994) and the end of

this Element cycle (June 1996) translates to a regional need of 880 units.

- (2) *Units in Need of Repair:* The Housing Conditions Inventory identified a total of 340 residential structures in need of repair. Of these units, 316 were identified as adequate but in need of minor repairs and 24 homes received a rating of substandard. Two of these substandard units require replacement.
- (3) *Overpaying Households:* Sales and rental rates for housing units in the City are at a level such that an estimated 1,684 lower income households are paying more than 30 percent of their income for housing. Certain households in Chino Hills may have a more difficult time finding decent, affordable housing, such as seniors, large families and female-headed households.

These specific areas - expected growth, substandard housing, overpayment for housing and households with special needs - are areas in which the City can target its efforts toward realizing its goal for the provision of adequate housing.

Table H-22
City of Chino Hills
Existing and Projected Housing Needs

Overpaying Households (a)		Special Needs Households/Persons (a)	
Total	1,684	Elderly (Households)	1,182
Renter	896	Large Family (Households)	2,403
Owner	788	Disabled (Persons)	872
		Female Headed w/Children	716
		Farmworker (Persons)	436
		Homeless (Persons)	0
Units in Need of Repair (b)		Household Growth(c)	
Total	340		<u>5 Year</u> <u>2 Year</u>
Adequate, Needs Rehabilitation	316	Total	2,200 880
Substandard, Needs Rehabilitation		Very Low Income	231 92
Substandard, Needs Replacement	22	Low Income	222 89
	2	Moderate Income	368 147
		Upper Income	1,379 552

Source: (a) 1993 figures are obtained by applying proportions contained in the 1990 Census to the City's 1993 household estimate.
(b) Cotton/Beland/Associates, Housing Conditions Survey, May 1993.
(c) Cotton/Beland/Associates, Inc. 5 Year household growth figures are for the 7/94-6/99 period, and are pro-rated for the 2 year period (7/97-6/96) of this Housing Element.

Note: Special needs figures cannot be totaled because categories overlap and are not exclusive of one another.

IV. CONSTRAINTS ON HOUSING PRODUCTION

A variety of factors add to the cost of housing in Chino Hills and constrain the provision of affordable units. These include market, governmental and infrastructure constraints.

A. MARKET CONSTRAINTS

The high cost of renting or buying housing is the primary ongoing constraint to providing adequate housing in the City of Chino Hills. High construction costs, labor costs, land costs and market financing constraints all contribute to limit the availability of affordable housing.

Construction Costs

The single largest cost associated with building a new house is the cost of building materials, comprising between 40 to 50 percent of the sales price of a home. According to the Construction Industry Research Board, overall construction costs rose over 30 percent during the past decade, with rising energy costs a significant contributor. Construction costs for wood frame, single family homes of average to good quality range from \$45 to \$60 per square foot. Custom homes and units with extra amenities run substantially higher. Costs for wood frame, multi-family construction average around \$42 per square foot, exclusive of parking. Construction of subterranean parking commands a much higher cost than surface parking, although most residential parking in Chino Hills is and will continue to be in above-ground parking lots.

Lower housing costs can be achieved with the following factors: a) reduction in amenities and quality of building materials (above a minimum acceptability for health, safety, and adequate performance); b) availability of skilled construction crews who will work for less than union wages; and c) use of manufactured housing (including both mobile home and modular housing). An additional factor related

to construction costs is the number of units built at the same time. As the number of units developed increases, construction costs over the entire development are generally reduced based on economies of scale. This reduction in costs is of particular benefit when density bonuses are utilized for the provision of affordable housing.

Land Costs

Single-family land costs vary considerably in Chino Hills, depending on location within the city. Information provided by Harvest Development, a local residential development company, indicates that a typical one acre parcel zoned for single-family development averages \$72,600.

Financing

While interest rates have fallen more than 10 percent since peaking near 20 percent in the early 1980s, they still have a substantial impact on housing costs which is felt by renters, purchasers and developers. Many homebuyers choose variable rate mortgages as the initial interest rate is several percentage points below fixed rate mortgages. However, the ability of lending institutions to raise rates to adjust for inflation can result in mortgage holders overextending themselves financially, as well as returning to a situation where high financing costs substantially constrain the housing market. An additional obstacle for the first-time home buyer is the 10-20% downpayment required by lending institutions.

Interest rates are determined by national policies and economic conditions, and there is little that local governments can do to affect these rates. Jurisdictions can, however, offer interest rate writedowns to extend home purchase opportunities to lower income households. In addition, government insured loan programs may be available to reduce mortgage downpayment requirements.

The Community Reinvestment Act (CRA) of 1977 regulates community bank lending practices in lower income neighborhoods. A lender or insurer cannot deny an applicant a loan solely based on location. Similarly, an applicant cannot be denied a loan based on different or subjective underwriting standards within a market area. The same type of credit must be extended to all applicants with similar credit history, employment record, financial condition, and loan-to-value-ratio.

Under the CRA, banks are also required to lend within low- and moderate-income communities, to have meaningful communication with members of the community regarding banking services, and to market or provide special credit-related information programs to make residents aware of the bank's credit services. It is believed that if local banks increase budgeted funds for well publicized community banking programs and services, they will help improve the economic livelihood of the community they serve. Based upon a showing of poor local bank participation within low- and moderate-income neighborhoods, the federal banking system can deny application of national banks to merge or expand.

One way to monitor the lending practices in a city is the Home Mortgage Disclosure Act (HMDA) which requires major lending institutions to disclose the number, amount, and location of mortgage and rehabilitation loans originated or purchased. Annual HMDA reports were reviewed to evaluate whether residential financing is generally available in Chino Hills. During 1991, a total of 3,653 loans were initiated in Chino Hills which included home purchase loans, refinancing of home purchase loans, and home improvement loans.

The majority of loan applicants (1,848) applied for home purchase loans. Of these loan applicants, 1,187 applications (64%) were approved and accepted, and approximately 16 percent were denied (303 applications). Similar to Chino Hills, the San Bernardino/Riverside County Metropolitan Statistical Area (MSA) evidenced 64 percent loan approval/acceptance rates, although denials for home purchase loans were somewhat higher at 19

percent. A substantial number of applicants also applied for home refinancing loans in Chino Hills - 899 applications (62%) were approved, and 345 applications (24%) denied, again fairly comparable to the 61% approval rate and 26% denial rate in the MSA. Lastly, 348 persons applied for home improvement loans in Chino Hills; 175 (50%) were approved/ accepted, and 134 (38%) denied. The MSA had a slightly higher percentage (55%) of home improvement loans approved and accepted, and a similar denial rate (37%) as was reported in Chino Hills. Overall, financing seems to be available in City, comparable with the MSA.

Profit, Marketing and Overhead

Developer profits generally comprise 5 to 10 percent of the selling price of single-family homes and slightly lower for condominiums. Rising marketing and overhead costs have contributed to the rising costs of housing. Inflation has spurred much of the increase in marketing and overhead. Intense competition among developers has necessitated more advertising, more glamorous model homes and more expensive marketing strategies to attract buyers.

B. GOVERNMENTAL CONSTRAINTS

Housing affordability is affected by factors in both the private and public sectors. Actions by the City can have an impact on the price and availability of housing in the City. Land use controls, site improvement requirements, building codes, fees and other local programs intended to improve the overall quality of housing may have the unintended consequence of serving as a constraint to housing development.

Land Use Controls

Prior to the City's incorporation, development in the City of Chino Hills was controlled by San Bernardino County through the Chino Hills

Specific Plan and the County of San Bernardino Development Code. The City assumed the responsibility of development review upon incorporation. The Specific Plan and the City Development Code regulate development within the City. However, the City is currently preparing an entirely new Development Code which will clarify development standards for existing zone districts and establish standards for newly-created residential zones.

The City plans to use the Development Code as the primary tool to implement land use policy. Thus, the Specific Plan has been rewritten to cross-reference the Development Code to the greatest extent possible. Currently, land use category standards contained in the Specific Plan regulate development within the Specific Plan area. The city's long-term goal, however, is to rezone Specific Plan properties with standard zone districts.

The new Chino Hills Development Code is anticipated to be adopted by mid-1994. Development standards contained in the current Draft Development Code and Specific Plan are summarized in Table H-23.

The Chino Hills Specific Plan and Draft Development Code provide for a full range of residential types and densities as follows:

Chino Hills Specific Plan:

General Agriculture (1 du/5 acres)
Rural Living (1 du/2 acres)
Single Residential 7.3 du/acre)
Multiple Residential (14 du/acre)

City of Chino Hills Draft Development Code:

Rural Residential (0.25 du/acre)
Low Density Residential (6 du/acre)
Medium Density Residential (12 du/acre)
High Density Residential (25 du/acre)
Very High Density Residential (35 du/acre)
Planned Development (variable)

The Planned Development (PD) Zone district offers developers flexibility in the types and design of residential projects and can be applied throughout the city in all General Plan categories. Normally, the minimum parcel size for a PD is 50 acres, although smaller parcels may be granted PD status as appropriate. Within a PD, setbacks, densities, building heights, and other development criteria can be tailored to fit a particular site and meet a particular housing need, provided the overall density conforms to General Plan land use policy. The PD allows for clustering of units, and provides for smaller lots and relief from traditional zoning standards.

The City's Development Code contains Dependent Housing provisions to facilitate and regulate the development of dependent housing. While the Code does require a Conditional Use Permit for development of dependent housing, parking and other standards have been developed so as not to discourage the establishment of second units. For example, only one parking space for the unit is required.

Manufactured homes offer additional affordable housing opportunities to City residents. Manufactured housing units are permitted by right in any residential district comparable to a single-family dwelling.

The City's proposed parking requirements are similar to those used by many jurisdictions. Two spaces are required for every single-family and multi-family unit. In multi-family units, guest spaces must also be provided at a ratio of one space for every four units. For single-family units, the required two spaces must be provided in a garage and/or carport. No covering requirements exist for multi-family residential developments.

The City does not have any growth control measures in place.

**Table H-23
Development Standards**

Districts	Characteristics of Lot, Location, and Height						
	Maximum Height	Minimum Lot Size	Maximum Lot Coverage	Minimum Lot Dimensions (Width/Depth)	Front Yard Setback	Side Yard Setback	Rear Yard Setback
Chino Hills Specific Plan							
General Agriculture	35 ft.	5 acres (gr)	15%	150 ft/150 ft	25 ft	20 ft	20 ft
Rural Living	35 ft.	20,000 sq.ft.	40%	100 ft/100 ft	25 ft	20 ft	20 ft
Single Residential	35 ft.	6,000 sq.ft.	40%	60 ft/100 ft	25 ft	5 ft/ 10 ft ⁽²⁾	15 ft
Multiple Residential	35 ft.	10,000 sq.ft.	—	Interior Lots - 80 ft Corner Lots - 100 ft ⁽¹⁾ Lots on cul-de-sac or knuckle street - 35 ft	One story- 25 ft Two story- 35 ft	15 ft	15 ft
City of Chino Hills Development Code							
Rural Residential	35 ft	2.0 acres	10%	150 ft/150 ft	25 ft	Street-25 ft Other-15 ft	15 ft
Low Density Residential	35 ft	6,000 sq ft	40%	60 ft/100 ft	25 ft	Street-25 ft All others- 10 ft	15 ft
Medium Density Residential	35 ft	10,000 sq. ft	55%	60 ft/100 ft	25 ft	Street-25 ft All others- 10 ft	15 ft
High Density Residential	42 ft	20,000 sq. ft.	60%	100 ft/100 ft	25 ft	Street-20 ft Other-10 ft	10 ft
Very High Density Residential	42 ft	20,000 sq. ft.	60%	100 ft/100 ft	20 ft	Street-20 ft Other-10 ft	10 ft

- 1) All interior lots shall have a minimum width of 85 feet except for residential subdivisions of five or more lots. The minimum lot width may be reduced to 75 feet provided the minimum overall average lot width of the subdivision is 80 ft.
- 2) If only one interior side yard, then may be five feet.

Fees and Improvements

The City of Chino Hills initially inherited a fee schedule from the Chino Hills Specific Plan, established under the County's administration. In early 1993, the City adopted a revised fee schedule to reduce development costs. As part of the General Plan program, the City has contracted with an economic/fiscal consulting firm to evaluate development fees, and to devise a comprehensive revision to the City's development fee system to ensure fees do not unduly constrain development.

Building Codes and Enforcement

The City of Chino Hills adopted the Uniform Building Code in 1991. This code is considered to be the minimum necessary to protect the public health, safety and welfare. No local amendment to the code has been approved which directly affects housing standards or processes. The City is, however, considering the adoption of a local fire sprinkler ordinance which requires the installation of automatic sprinkler systems in apartment buildings (7/93). According to residential sprinkler contractors, sprinklers add approximately \$1.00 to \$1.50 per square foot in construction costs.

Local Processing and Permit Procedures

The evaluation and review process required by City procedures contributes to the cost of housing in that holding costs incurred by developers are ultimately manifested in the unit's selling price. The City's goal is to process subdivision tract maps within two months after a final application is received. Because no new tract maps have been submitted since incorporation, this has not been tested to date.

The City follows a fairly straightforward procedure for processing tentative tract maps. All subdivisions go through a two-step processing procedure. First, a Development Review Committee (DRC), comprised of all the agencies required to review the applica-

tion, reviews the tentative tract map. The Director of Community Development forwards a recommendation to the Planning Commission. Second, the Planning Commission reviews the application. The Commission is the approving body for all residential subdivisions under 20 acres. Any subdivision over 20 acres is forwarded to the City Council for final action.

For residential projects not requiring subdivisions, the City has established in the Draft Development Code, new streamlined project review procedures. Many residential projects (all except individual single-family homes on existing lots) are subject only to staff-level review via the Planning Use Permit (PUP) process. (Formerly, many projects required Conditional Use Permits.) Once a PUP application has been deemed complete, the DRC has 30 days to review a project for conformance with all development regulations and the General Plan and to approve or conditionally approve an application. No public hearing or notification of a PUP application is required.

C. INFRASTRUCTURE CONSTRAINTS

Another factor adding to the cost of new construction is the cost of providing adequate infrastructure--major and local streets; curbs, gutters, and sidewalks; water and sewer lines; and street lighting--which is required to be built or installed in new development. In most cases, these improvements are dedicated to the City, which is then responsible for their maintenance. The cost of these facilities is eventually passed on to the homebuyer or property owner in the form of higher prices for new homes.

An extensive infrastructure system is already in place in the developed portions of Chino Hills. Water and sewer lines are relatively new and in good condition in the majority of the City, and can accommodate additional development proposed under the General Plan. Based on new fire standards, some areas (Los Serranos, Sleepy Hollow and Canon Lane) have inadequate water pressure, and the City

will need to upgrade water lines over time. In addition, Carbon Canyon is unable to accommodate the sewage flow from any new development with parcels under five acres. According to the City Engineer, an off-site sewage treatment facility will need to be built to handle additional sewage from Carbon Canyon. The estimated cost of this facility is \$2,000,000, and plans are under way to provide the needed improvements. Similar to Carbon Canyon, any development occurring in Tres Hermanos will require sewer infrastructure, including a lift station. However, development of the permitted 350 units in Tres Hermanos represents a long term development potential, and will not occur during this planning period.

V. HOUSING OPPORTUNITIES

This section of the Housing Element evaluates the potential additional residential development which could occur in Chino Hills under current General Plan and zoning and discusses opportunities for energy conservation in residential development.

A. AVAILABILITY OF SITES FOR HOUSING

The City's General Plan and zoning provides for an estimated 26,815 dwelling units to be constructed within Chino Hills. Sixty percent of these dwelling units have already been built, with approximately 10,500 units remaining. Table H-24 quantifies remaining vacant acreage under each land use category, and potential residential growth. Dwelling unit potential has been calculated based on the maximum number of permitted units identified for each "planning unit" in the Specific Plan area, correlated with the General Plan land use densities. Figure H-5 provides a general Citywide overview of available residential sites, and Figures H-5A, H-5C, H-5D and H-5E illustrate the location and relative size of these vacant residential sites in greater detail.

The Land Use Policy Map designates 9,486 acres of the City's land for single-family land uses, yielding a development potential of 7,137 dwelling units, ranging in density from .2 to 12 du/acre. A significant portion of this acreage has been designated Agricultural/Ranches to reflect the presence of existing agriculture and cattle grazing activities, and/or topographical and geologic constraints. Areas designated Agriculture/Ranches represent long term development opportunities, will not have

the necessary infrastructure in place to develop during the timeframe of this Housing Element, and have therefore not been included in the calculation of potential dwelling units. All other residentially designated vacant land is available for development within the current planning period.

The General Plan designates 116 acres of land for multi-family development in Chino Hills, which includes 82 acres of High Density and 34 acres of Very High Density land use. Combined, these multi-family land use classifications can accommodate a net increase in 2,800 multi-family units. The Land Use Policy Map designates three sites for Very High Density Residential at densities up to 35 du/acre providing for 875 additional units (refer to Figures H-5A, H-5C, H-5D). These sites are located adjacent to shopping and employment centers, and are intended for affordable rental and ownership units. An additional 1,900+ units can be developed at densities up to 25 units/acre under the High Density land use designation (refer to Figures H-5B, H-5C, H-5D).

Residential Development Potential Compared with Chino Hills' Regional Housing Needs

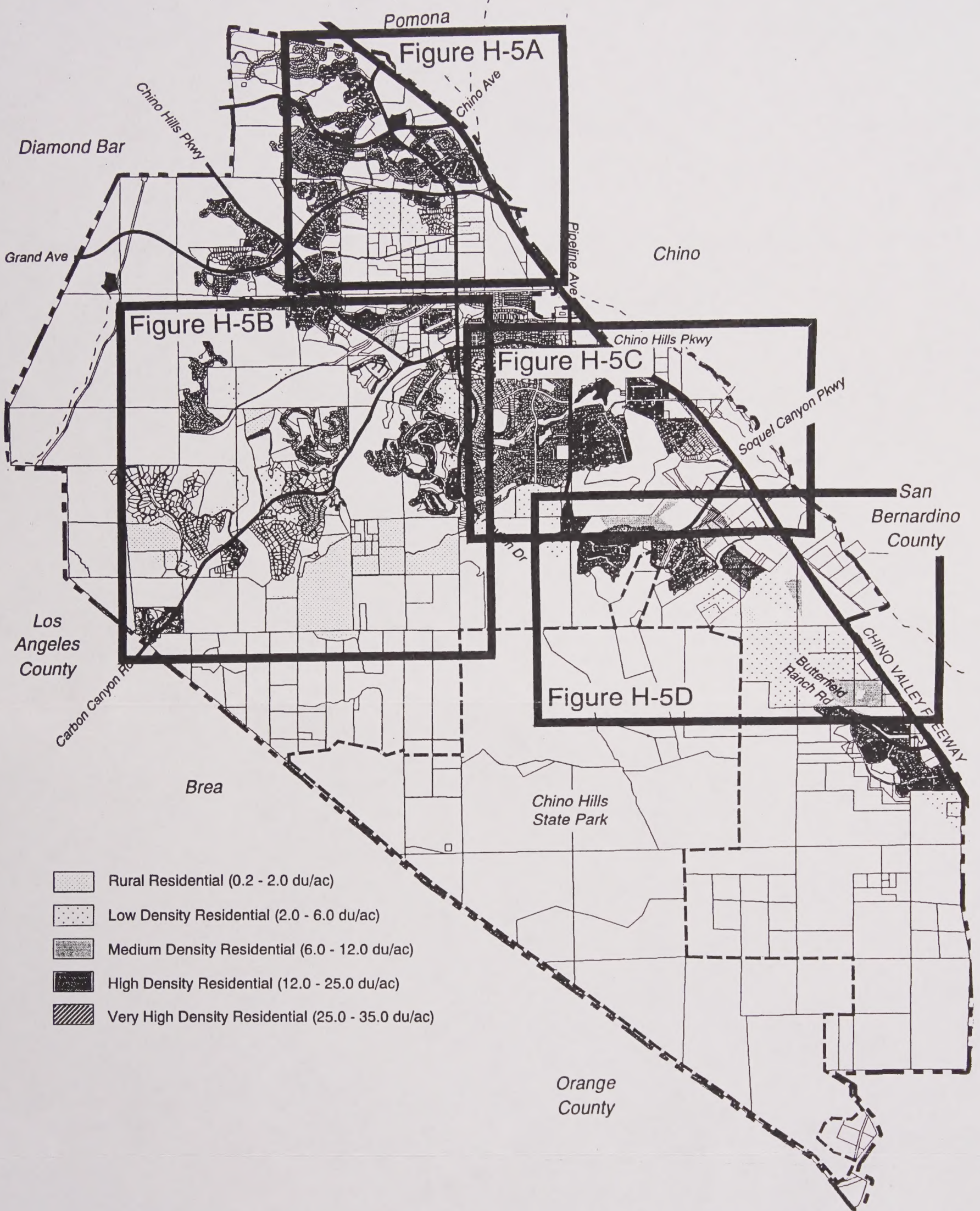
As indicated in Table H-22, the projected regional housing need for Chino Hills is 880 dwelling units through June 30, 1996. The General Plan provides for a net increase in 10,529 dwelling units, ranging from low density estates to very high density apartments and condominiums. This would indicate the City's General Plan will provide for a residential development capacity which is adequate to accommodate the City's share of regional housing needs.

Table H-24
City of Chino Hills
Potential Residential Development Summary

Housing Type	Existing Dwelling Units (1993)	Potential Dwelling Units at Buildout	Remaining Vacant Acreage	Net Increase Dwelling Units
Single-family				
Agriculture/Ranches <i>0.2 du/ac or less</i>		750	7,760	(588) ⁽²⁾
Rural Resid. <i>0.2-2 du/ac</i>		935	745	3,231
Low Density Resid. <i>2-6 du/ac</i>		3,230	718	3,156
Med. Density Resid <i>6-12 du/ac</i>		15,600	263	750
Total Single-family	12,790	20,515		7,137
Multi-family				
High Density Resid. <i>12-25 du/ac</i>		6,536 ⁽¹⁾	82	1,929
Very High Density Resid. <i>25-35 du/ac</i>		875	34	875
Total Multi-family	2,881	5,685		2,804
Mobilehomes	615⁽¹⁾			0
Total	16,286	26,815	9,602	9,941

⁽¹⁾ Mobilehomes are included under High Density land use classification in the Land Use Plan

⁽²⁾ Land designated Agriculture/Ranches represents long-term development potential, and have not been included in the calculation of potential dwelling units as they will not have the necessary infrastructure in place to develop during this planning period.



SOURCE: Cotton/Beland/Associates, Inc.

North 0 5000
scale in feet

Figure H-5
Vacant Lands Available for
Residential Development



Small rectangular label with illegible text, possibly a title or reference code.



Figure H-5A
 Vacant Lands Available for
 Residential Development



-  Rural Residential
(0.2 - 2.0 du/ac)
-  Low Density Residential
(2.0 - 6.0 du/ac)
-  Medium Density Residential
(6.0 - 12.0 du/ac)
-  High Density Residential
(12.0 - 25.0 du/ac)
-  Very High Density Residential
(25.0 - 35.0 du/ac)

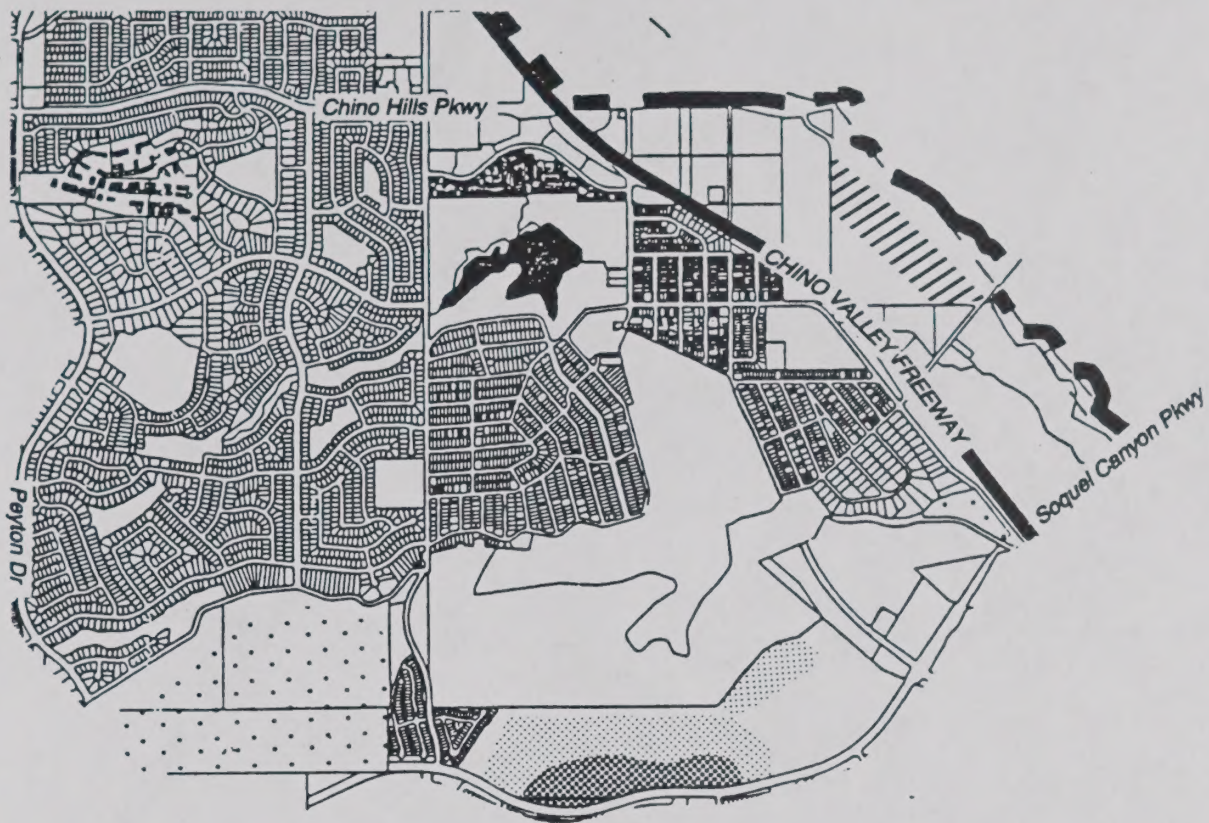
SOURCE: Cotton/Beland/Associates, Inc.



North

0 3000
scale in feet

Figure H-5B
Vacant Lands Available for
Residential Development



-  Rural Residential
(0.2 - 2.0 du/ac)
-  Low Density Residential
(2.0 - 6.0 du/ac)
-  Medium Density Residential
(6.0 - 12.0 du/ac)
-  High Density Residential
(12.0 - 25.0 du/ac)
-  Very High Density Residential
(25.0 - 35.0 du/ac)

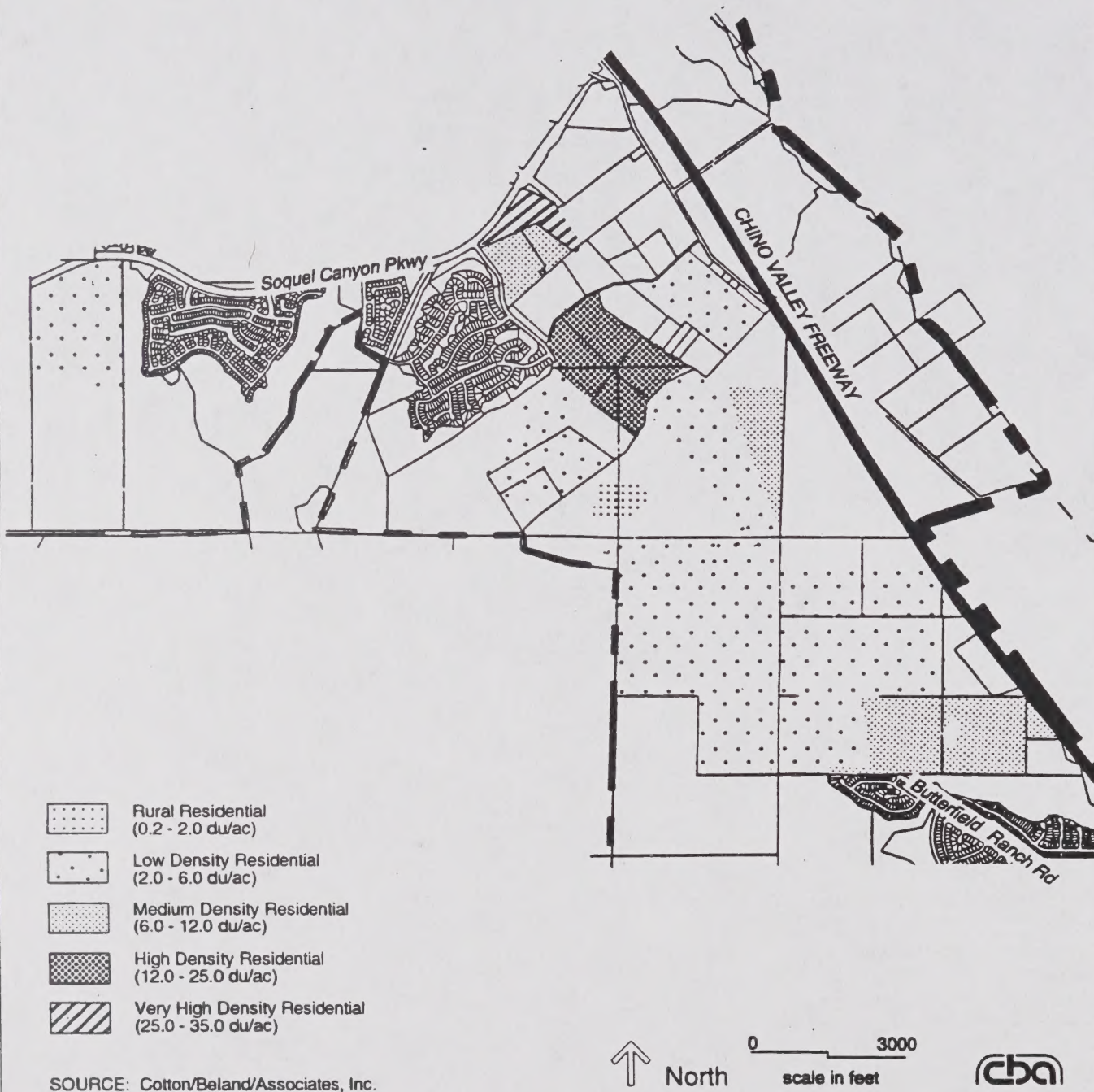
SOURCE: Cotton/Beland/Associates, Inc.



North

0 3000
scale in feet

Figure H-5C
Vacant Lands Available for
Residential Development



In terms of development opportunities for lower income households, the Land Use Plan provides for a net increase of 2,804 multi-family dwelling units, including 875 Very High Density units at 25-35 du/acre. Densities of 25 units/acre and above can be used as a general standard of affordability to lower income households. Based on this density standard, the City's regional housing needs of 181 lower income units are thus more than adequately accommodated under the Land Use Plan. The City will further assist in the development of affordable housing through housing programs set forth in the Housing Element, including mortgage revenue bond financing and a density bonus/affordable housing ordinance.

Availability of Public Services and Facilities

Public facilities are generally available to facilitate development in Chino Hills. Almost all of the land designated for residential use can be easily served by sewer lines, water lines, streets, storm drains, telephones, electrical and gas lines; land outside the Specific Plan area designated Agriculture/Ranches represents long term development potential, and will not be served with infrastructure during this planning period. A new off-site sewage treatment facility will need to be built to handle additional sewage from Carbon Canyon, and plans are under way to provide the needed facility. In addition, the 350 single-family units provided for in Tres Hermanos will require sewer infrastructure, including a lift station; Tres Hermanos is not included in the City's inventory of sites available for development during this planning period. All areas designated for multi-family housing are within the urban core, and can easily tie in with the existing infrastructure system.

B. OPPORTUNITIES FOR ENERGY CONSERVATION

Under current law, this Chino Hills Housing Element must include the following:

Analysis of opportunities for energy conservation with respect to residential development.
Government Code Section 65583(a)(7).

The Legislature in 1974 created the California Energy Commission to deal with the issue of energy conservation. The Commission in 1977 adopted conservation standards for new buildings. The Legislature directed the Commission to periodically improve the standards to account for state-of-the-art energy efficient building design. The Commission has adopted revised energy standards for new residential buildings. The revised energy conservation standards for new residential buildings have been placed in Title 24 of the California Administrative code. The new standards apply to all new residential buildings (and additions to residential buildings) except hotels, motels, and buildings with four or more habitable stores and hotels. The regulations specify energy saving design for walls, ceilings and floor installations, as well as heating and cooling equipment and systems, gas cooling devices, conservation standards and the use of nondepleting energy sources, such as solar energy or wind power.

In relation to new residential development, and especially affordable housing, construction of an energy efficient building does add to the original production costs of ownership and rental housing. Over time, however, the housing with energy conservation features should have reduced occupancy costs because the consumption of fuel and electricity is decreased. This

means the monthly housing costs may be equal to or less than what they otherwise would have been if no energy conservation devices were incorporated in the new residential buildings. Reduced energy consumption in new residential structures is one way of achieving affordable housing costs when those costs are measured in monthly carrying costs as contrasted to original sales price or production costs.

The Chino Hills Conservation Element contains the following policies to promote energy conservation:

- Encourage innovative site planning and building designs which minimize energy consumption by taking advantage of sun and shade patterns, prevailing winds, landscaping, and building materials.
- Encourage new development and existing structures to install energy saving features beyond those required under State Title 24 energy regulations.

Strategies the City can undertake to implement these policies include:

- Locating the structure on the northern portion of the sunniest area on the site.

- Designing the structure to admit the maximum amount of sunlight into the building and to reduce exposure to extreme weather conditions.
- Locating indoor areas of maximum usage along the south face of the building and placing corridors, closets, laundry rooms, power core, and garages along the north face to the building to serve as a buffer between heated spaces the colder north face.
- Making the main entrance a small, enclosed space that creates an air lock between the building and its exterior; orienting the entrance away from prevailing winds; or using a windbreak to reduce the wind velocity against the entrance.
- Locating window openings to the south and keeping east, west and north windows small, recessed, and double-glazed.

These and any other potential state-of-the-art opportunities could be evaluated within the context of environmental impact reports and/or site plan review. Feasible site planning and/or building design energy conservation opportunities then could be incorporated into the project design.

VI. HOUSING PLAN

Chapters II to V establish the housing needs, opportunities, and constraints in Chino Hills. The Housing Plan sets forth the City's goals, policies, and programs to address Chino Hills' identified housing needs.

A. GOALS AND POLICIES

This section of the Housing Element contains the goals and policies the City of Chino Hills intends to implement to address housing-related issues. The following issue areas are addressed by the goals and policies of the Element: 1) ensure that a broad range of housing types are provided to meet the needs of existing and future residents; 2) ensure that housing is maintained and preserved; 3) ensure housing is sensitive to environmental issues; 4) ensure the availability of housing-related services for special needs groups; 5) promote equal housing opportunity. Each issue area and the supporting goals and policies are described below.

HOUSING OPPORTUNITIES

The City of Chino Hills developed primarily as a low density single-family community. This low density character has been preserved by locating the majority of multi-family development adjacent services and commercial centers, and simultaneously creating an extensive open space network. Preserving the City's rural character while accommodating new growth is a community priority.

GOAL 1: Provide a range of housing types while maintaining the City's overall low density character.

Focused Goal 1-1: Establishment of land use densities appropriate to their location in the City (see Land Use Element).

Objective 1-1: Encourage the development of 800 dwelling units through June 30, 1996 to achieve the City's regional housing needs.

Policy 1-1.1: Provide a variety of residential opportunities in the City, including large lot estates, low density single-family homes, medium density townhomes, and higher density condominiums and apartments.

Policy 1-1.2: Facilitate the development of affordable housing by offering developers incentives such as density bonuses and flexibility in zoning and development standards, as established by State law.

Policy 1-1.3: Avoid concentration of higher density housing in any single portion of the City. Encourage smaller-scale multi-family projects of high quality design.

Policy 1-1.4: Require compatible design to minimize the impact of new residential development on existing residences.

Policy 1-1.5: Ensure that all regulations, ordinances, departmental processing procedures, and fees do not unduly impact housing costs.

Policy 1-1.6: Encourage the development of residential units that are accessible to handicapped persons or are adaptable for conversion to residential use by handicapped persons.

MAINTENANCE AND PRESERVATION

The majority of housing in Chino Hills is in satisfactory condition. However, the housing conditions survey identified nearly 350 units in the City's older neighborhoods (Los Serranos, Canon Lane, and Sleepy Hollow) that require

substantial repairs. As the City's housing stock continues to age, on-going maintenance is vital to prevent further deterioration. In addition, the General Plan indicated concern about the continued maintenance of neighborhoods and mobilehome parks in Chino Hills.

GOAL 2: Maintain and enhance the quality of existing residential neighborhoods.

Focused Goal 2-1: Safe and affordable housing for all residents.

Objective 2-1: Achieve the rehabilitation of 150 households through County rehabilitation programs and maintain rental subsidies to 89 very low income households in Chino Hills. Preserve the City's existing 615 mobilehomes, and, in addition, preserve the 114 multi-family units at-risk of converting to market rate uses.

Policy 2-1.1: Pursue establishment of a City-sponsored residential rehabilitation program. Advertise rehabilitation assistance available through the County.

Policy 2-1.2: Utilize the housing conditions survey to delineate target areas for rehabilitation assistance.

Policy 2-1.3: Conserve mobilehome parks which are economically and physically sound, and provide tenants with information regarding available assistance for upgrading.

Policy 2-1.4: Continue to utilize the City's code enforcement program to bring standard units into compliance with City codes and to improve overall housing conditions in Chino Hills.

ENVIRONMENTAL SENSITIVITY

It is an on-going concern in the City that residential growth be sensitive to the environment. Development will be designed to mini-

mize impacts on the natural environment and to be coordinated with available community resources and infrastructure.

GOAL 3: Ensure that new housing is sensitive to the natural environment.

Focused Goal 3-1: Development which relates to environmental constraints (see Land Use Element and Conservation Element).

Objective 3-1: All new development shall preserve hillsides, environmentally sensitive habitats, open space areas, and scenic vistas as specified in the Specific Plan and Development Code. In addition, the City shall implement Title 24 and design concepts to conserve energy resources (See Section V. Housing Opportunities: B. Opportunities for Energy Conservation, and the Conservation Element).

Policy 3-1.1: Provide for clustering of housing to preserve environmentally sensitive areas and open space corridors.

Policy 3-1.2: Evaluate residential proposals within hillside areas in terms of potential impacts to landform and viewsheds. Hillside residential development should be limited to very low density.

Policy 3-1.3: Encourage the use of energy conservation devices and passive design concepts which make use of the natural climate to increase energy efficiency and reduce housing costs.

HOUSING SERVICES

In addition to policies designed to increase the availability and adequacy of the City's affordable housing stock, it is important that services are available to ensure the efficient utilization of the housing stock. In order to make adequate provision for the housing needs of all economic segments of the community, the City must ensure fair housing opportunities are available to all residents.

GOAL 4.0: Provide support services in meeting the housing needs of the City's residents.

Objective 4-1: Coordinate with area service providers in the delivery of housing related services.

Policy 4-1.1: Prohibit discrimination in the sale or rental of housing with regard to race, ethnic background, religion, handicap, income, age, sex, and household composition.

Policy 4-1.2: Encourage the development of child care facilities in conjunction with new office/commercial and housing development. Evaluate the establishment of an in-lieu fee for development to provide child care facilities, as needed.

Policy 4-1.3: Provide reference and referral services for seniors, such as in-home care and counseling for housing-related issues, to allow seniors to remain independent in the community.

Policy 4-1.4: Work with existing area social service providers in addressing the needs of the area homeless population. Support the San Bernardino County Homeless Coalition (West End) in their efforts to coordinate homeless services.

B. EVALUATION OF ACCOMPLISHMENTS UNDER ADOPTED HOUSING ELEMENT

State Housing Element law requires communities to assess their achievements under adopted housing programs as part of the five year update to their housing elements. These results should be quantified where possible (e.g. rehabilitation results), but may be qualitative where necessary (e.g. mitigation of governmental constraints). These results then need to be compared with what was projected or planned in the earlier element. Where significant shortfalls exist between what was planned and what was achieved, the reasons for such differences must be discussed.

The City of Chino Hills is preparing its first Housing Element. Subsequent revisions to this element will evaluate the City's accomplishments in satisfying the housing goals established in this Element.

C. SHARE OF REGION'S HOUSING NEEDS

State law requires jurisdictions to provide for their share of regional housing needs. Normally, as part of the Regional Housing Needs Assessment (RHNA), the Southern California Association of Governments (SCAG) determines the five year housing growth needs by income category for cities within its jurisdiction, which now includes the City of Chino Hills. Future housing needs reflect the number of new units needed in a jurisdiction based on households which are expected to reside within the jurisdiction (future demand), plus an adequate supply of vacant housing to assure mobility and new units to replace losses. However, because Chino Hills had not yet incorporated at the last time the estimates were prepared in 1988, the RHNA did not provide 1989-1994 estimates for the corporate boundaries of Chino Hills. In addition, due to a suspension in State funding, SCAG will not be developing the new 1994-1999 RHNA until sometime in 1994.

Because SCAG's assessment of future housing needs is not available, this Housing Element utilizes a projection of regional housing need for the period between adoption of the Housing Element and June 30, 1996 which has been prepared by the City based on the SCAG RHNA methodology. *A worksheet outlining the specific steps taken in developing the City's regional housing needs is included as Appendix A to the Housing Element.*

In general terms, the three factors considered in determining housing unit growth are: household growth, unit vacancies, and expected demolitions. Household growth projections for Chino Hills have been prepared by Tischler and Associates as part of the General Plan Economic Development Element. These projections factor in historic residential growth and

residential holding capacity, and estimate 3,100 households will be created in Chino Hills between July 1994 - July 1999 under a modified geometric growth scenario.

The vacancy adjustment in the RHNA involves determining the City's ideal vacancy rate based on the ratio of single-family to multi-family units, and translating this into the City's "vacancy need" during the five year period to maintain this ideal vacancy rate. The State Department of Finance documents an 8.72% vacancy rate in Chino Hills in 1993, well above the City's ideal vacancy rate of 2.65%. (Ideal vacancies are defined by SCAG as 2% for single-family and 5% for multi-family, with the overall ideal rate determined by the City's mix of single and multi-family units.) Thus, the City has vacant units well in excess of that necessary for normal turnover, and subtracts these excess units (900) from projected household growth.

A final adjustment to projected housing needs is made based on the number of units

expected to be demolished during the five year period. Review of Building Department records since the City's incorporation (December 1991) indicate no residential demolitions have occurred. Given the recent age and high quality of the City's housing stock, no demolitions are expected during the five year cycle of the Housing Element.

Given the above assumptions of household growth, vacancies, and demolitions, 2,200 housing units will need to be added to the Chino Hills housing stock by June, 1999 to fulfill the City's share of regional housing needs. This five year growth need is then prorated to the two year period remaining in the cycle for the City's first housing element; future regional growth figures for the City will represent a full five year period. The City's future housing need is further broken down by the income levels of the households the units will need to be supplied for, illustrated in Table H-25:

Table H-25
City of Chino Hills
Household Needs by Income Group

Income Category	Housing Units ^(a)		Percent
	<u>5-Year</u>	<u>2-Year</u>	
Very Low (0-50% County median income)	231	92	10.5%
Low (50-80% County median income)	222	89	10.1%
Moderate (80-120% County median income)	368	147	16.7%
Upper (over 120% County median income)	1,379	552	62.7%
Total Housing Units	2,200	880	100.0%

Source: Cotton/Beland/Associates; State Department of Housing and Community Development

(a) 5-Year housing growth figures are for the 7/94-6/99 period, and are prorated for the 2 year period (7/97-6/96) of this Housing Element.

The distribution of future housing needs by income group is primarily based on Chino Hills income distribution as documented by the 1990 Census. State law requires in allocating the percentage distribution by income level for each city, further "impaction", or concentration of lower income households be avoided. Because Chino Hills has well below the regional average of lower income households (14.3% vs. 38.8%), the City's income distribution has been adjusted "25% of the way" towards the regional average. For purposes of this income adjustment, Chino Hills has utilized HCD's methodology.

D. HOUSING PROGRAMS

The goals and policies contained in the Housing Element address Chino Hills identified housing needs and are implemented through a series of housing programs. Housing programs define the specific actions the City will undertake to achieve specific goals and policies.

The City of Chino Hills' overall housing program strategy for addressing its housing needs have been defined according to the following issue areas:

- Conserving and improving the condition of the existing stock of affordable housing.
- Providing adequate sites to achieve a variety and diversity of housing.
- Assisting in the development of affordable housing.
- Removing governmental constraints.
- Providing housing related services, including the promoting of equal housing opportunity.

Housing programs include both current City and County efforts, and new programs which address the City's unmet housing needs. This section provides a description of each housing program and future housing actions through June 30, 1996. The Housing Program Imple-

mentation Table (Table H-26) outlines the future actions for each housing program, along with identifying the program funding source, responsible agency, and time frame for implementation.

The primary funding sources currently used by the City of Chino Hills for implementing its housing programs are Community Development Department budgets, and Federal HUD funds administered through the County CDBG and Section 8 programs. Other potential financial resources available to the City for the preservation, improvement and development of housing include direct CDBG entitlement, HOME funds, Mortgage Revenue Bond funds, Low Income Housing Tax Credits, CHFA first-time homebuyer funds, and Federal Home Loan Bank Affordable Housing funds.

CONSERVING AND IMPROVING EXISTING AFFORDABLE HOUSING

Maintaining Chino Hills older residential neighborhoods is vital to preserving the overall high quality and character of the community. The housing conditions survey identified three primary areas in the city with concentrations of housing in need of upgrading: Los Serranos, Canon Lane, and Sleepy Hollow.

In addition to maintaining its housing stock, Chino Hills will strive to conserve existing affordable units in the community, including preservation of the assisted housing stock, rental subsidies, and mobilehomes.

1. **Housing Rehabilitation Program:** The San Bernardino County Department of Economic and Community Development administers a variety of housing rehabilitation programs in Chino Hills. The County finances these programs with funds received from the U.S. Department of Housing and Urban Development (HUD) through its Community Development Block Grant (CDBG) fund and Home Investment Partnerships Program (HOME) fund. The following federally funded,

housing rehabilitation assistance is available to Chino Hills residents:

- Single-family Rehabilitation (Deferred Loans, Subsidy Loan, Formal Assurance Loan, and Free Repair Program)
- Rental Rehabilitation Loan (This program has recently been restructured using HOME program funds. Low interest loans up to \$25,000 are available for providing or improving rental housing for low and moderate income households).

Senior households and mobilehome occupants have been the primary participants in the County's rehabilitation programs in Chino Hills. The County indicates that on average 20 owner-occupied households are annually provided assistance in Chino Hills. In addition to senior households and mobilehome occupants, overcrowded households (greater than 1.01 persons per room) are encouraged to take advantage of rehabilitation assistance. Rehabilitation efforts for overcrowded households concentrate on creating room additions which offer an affordable way to alleviate overcrowding. The County will continue to give priority preference to overcrowded households for rehabilitation assistance.

The City refers all households interested in rehabilitation assistance to the County. The County has been able to provide assistance to all qualified households and indicates sufficient funds are available to increase the current level of rehabilitation activity in Chino Hills.

Program Actions through June 30, 1996: The City will continue to cooperate with the County in administering housing rehabilitation programs in its jurisdiction and will assist in advertising program availability by placing brochure material at the public counter in City Hall and placing periodic advertisements in local periodicals. The City Newsletter (which is sent to every address in the City as well as local social service agencies) will include

information regarding priority assistance available to overcrowded households. The program objective will be to provide assistance to 50 owner occupied households and 10 renter households.

Once Chino Hills' population reaches 50,000 the City will pursue "entitlement status" with HUD, allowing the City to receive funding directly from HUD and to administer its own Community Development Block Grant Program. In addition to providing the City with a significant source of funds, entitlement status will provide the City with greater discretion over the types of programs offered and allow for targeting of certain neighborhoods. (See Table H-26.)

2. **Code Enforcement:** The objective of Chino Hills' code enforcement program is to bring substandard housing units into compliance with City codes. According to the City's Code Enforcement Officer, potential code violations are identified based on complaints reported to the City. If a building is determined to be unsound, the City informs the property owner of necessary improvements in writing, and provides a six week period for compliance. Severe health and safety violations are required to be at least temporarily fixed within 24 hours.

Given the high quality of the City's housing stock, few code citations have been issued related to structural deficiencies. Code citations are typically related to property maintenance, according to the City Code Enforcement Officer.

Program Actions through June 30, 1996: The City will continue its enforcement of building and other codes and will expand the program to inform property owners in violation of City codes of available rehabilitation assistance he/she may be eligible to correct code violations. (See Table H-26.)

3. **Condominium Conversion Ordinance:** The purpose of a condominium conversion ordinance is to regulate the conversion of

rental housing to condominium ownership and to ensure the rights of existing tenants. Under State Law, the conversion process requires that a minimum of 60 days notice be provided to all tenants prior to the filing of a tentative map for condominium ownership. Each of the tenants then has the right of first purchase of their respective units.

Chino Hills contains a substantial number of apartment complexes with an estimated 2,881 multi-family dwelling units located in the City. Several of these apartment complexes are actually legally condominiums, but are currently utilized as rentals in response to current market conditions. When the demand for condominiums again becomes strong, these rentals will convert to ownership housing.

Program Actions through June 30, 1996: The City will evaluate the minimum State standards which regulate condominium conversions and the stock of rentals at-risk of conversion and determine whether adoption of a local ordinance which provides added tenant protection is warranted. In addition, the City will provide tenants in projects proposed for conversion with information on programs available through the County, State, and Federal Government to assist in tenant purchase of units. (See Table H-26.)

4. **Mobilehome Park Program:** Three mobilehome parks with approximately 615 units are located in Chino Hills. All three parks are in good to excellent condition. The General Plan designates each of these parks for continued mobilehome use. In order to protect residents from possible conversion of parks to land uses that provide greater economic return to property owners, the City will enforce the following provisions as required under State law:

Mobilehome park owners will be required to file a report on the impact of park closure upon displaced residents and to identify replacement housing and relocation costs. The applicant must provide copies

of the impact report to each mobilehome park resident a minimum of 15 days prior to the hearing on the park closure. The legislative body will review the report and may require that the applicant take steps to mitigate any adverse impact of the conversion on the ability of displaced mobilehome park tenants to find adequate replacement housing in a mobilehome park. City staff shall inform the applicant in writing of these provisions at least 30 days prior to acting on the application.

Program Actions through June 30, 1996: Ensure mobilehome park tenants are provided adequate noticing regarding pending conversions and are provided appropriate compensation. Should a park become at risk of conversion, the City will meet with park tenants to provide information regarding the availability of housing assistance programs, including HCD's program to assist in tenant purchase of parks. (See Table H-26.)

5. **Section 8 Rental Assistance Program/Housing Vouchers:** The Section 8 rental assistance program extends federal rental subsidies to low income families and elderly who spend more than 30% of their income on rent. HUD pays owners the difference between what tenants can pay (defined as 30 percent of household income) and what HUD and the local Housing Authority estimate to be the fair market rent on the unit.

The voucher program is similar to the Section 8 program, although participants receive housing "vouchers" rather than certificates. Vouchers permit tenants to locate their own housing. Unlike the certificate program, participants are permitted to rent units beyond the federally determined fair market rent in an area, provided the tenant pay the extra rent increment.

The San Bernardino County Housing Authority administers the Section 8 Certificate/Voucher Program in Chino Hills. As of June 1993, 89 households in Chino Hills received rent certificates or vouch-

ers. The large majority of these households are small families (79).¹ Only ten large family households received rent subsidies. Nearly two-thirds (55 households) of Chino Hills residents in the Section 8 program are elderly households.

According to the County Housing Authority, the waiting period for Section 8 assistance is three to four years, with 98 households currently on the waiting list from Chino Hills. Of these 98 households, 67 are small family and 31 are large family households. Nineteen of the small households are comprised of elderly persons. The County is not currently accepting applications for Section 8 assistance, given the long waiting list.

Program Actions through June 30, 1996: The City will facilitate use of the Section 8 program in its jurisdiction by advertising in local periodicals the opportunity for owners to list available rentals with the Housing Authority. (See Table H-26.)

6. **Conservation of Existing and Future Affordable Units:** In order to meet the housing needs of all economic groups in Chino Hills, the City must guard against the loss of housing units available to lower income households. A total of 114 housing units in two projects financed by Mortgage Revenue Bonds are at-risk of conversion to market rate during the time-frame of this Housing Element. The City will implement the following programs to conserve its affordable housing stock.

Monitor Units At-Risk: Contact owners of "at risk" units as expiration dates on restricted units approach to determine the intent of property owners. Discuss with owners the City and County's desire to preserve at-risk units as affordable to low income households.

Time Frame: One year prior to potential expiration.

Responsible Agency: Community Development Department

Funding Source: Staff time

Coordinate with County Effort: All "at-risk" projects in Chino Hills are financed under mortgage revenue bond programs. The City will coordinate with the County and the owners of at-risk projects to encourage bond refinancing on these projects.

Time Frame: One year prior to potential expiration.

Responsible Agency: San Bernardino County Department of Economic and Community Development, City Community Development Department

Funding Source: Staff time

Work with Potential Priority Purchasers: Establish contact with public and non-profit agencies interested in purchasing and/or managing units at-risk to inform them of the status of at-risk projects. Refer them to the County Department of Economic and Community Development for additional information.

Time Frame: Ongoing

Responsible Agency: Community Development Department

Funding Source: Staff time

Tenant Education: Work with tenants of "at-risk" developments eligible for conversion to market rate use. This should include informational meetings about the County's Section 8 rent subsidies, and information regarding potential bond refinancing and purchase by non-profits to help residents understand available options for preserving low income use restrictions.

¹Small households are defined as households occupying a one or two bedroom unit; and large households, a three to four bedroom unit.

Time Frame: At least six months prior to subsidy termination, as identified in the schedule presented for monitoring units at-risk.

Responsible Agency: Community Development Department

Funding Source: Department budget, Community Development Block Grant (CDBG).

PROVISION OF ADEQUATE SITES

A key element in satisfying the housing needs of all segments of the community is the provision of adequate sites for housing. This is an important function of both the general plan and zoning.

7. **Land Use Element:** Planning and regulatory actions to achieve adequate housing sites is achieved through the Land Use Element and Development Code. The Land Use Element provides for a variety of residential types, ranging from lower density single-family homes to higher density apartments and condominiums. The residential development potential under the Chino Hills Land Use Plan provides for approximately 10,500 additional dwelling units, including Medium Density Residential (6-12 du/acre), High Density Residential (12-25 du/acre), and Very High Density Residential (25-35 du/acre) units. The Land Use Plan thus provides for adequate sites to meet the City's share of regional housing needs, which have been identified as 880 dwelling units through June 30, 1996.

Program Actions through June 30, 1996: Designate adequate sites at appropriate densities on the Land Use Plan to accommodate Chino Hills regional housing needs. Maintain an up-to-date inventory of sites suitable for residential development and provide to interested developers. (See Table H-26.)

ASSIST IN THE DEVELOPMENT OF AFFORDABLE HOUSING

Chino Hills contains a variety of environmental and topographic constraints which limit both the location and intensity of development. These factors contribute to land costs and result in housing costs which are higher than those typical of San Bernardino County jurisdictions. Incentive programs, such as density bonus and mortgage revenue bond financing, offer a cost-effective means of providing affordable housing, while allowing for City control to ensure high quality design. Public sector support for new construction includes the following programs for affordable housing development.

8. **Density Bonus/Affordable Housing Ordinance:** The Chino Hills Specific Plan contains an optional density bonus program for the provision of affordable housing. The program provides for a variety of incentives, including increased densities, reduced fees, and priority permit processing. The following Housing Element program calls for the City to codify and update the density bonus provision incentives contained in the Specific Plan and to ensure consistency with State law.

Pursuant to State density bonus law, if a developer allocates at least 20% of the units in a housing project to lower income households, 10% for very low income households, or at least 50% for "qualifying residents" (e.g. seniors), the City must either 1) grant a density bonus of 25%, along with one additional regulatory concession (such as modified development standards) to ensure that the housing development will be produced at a reduced cost, or 2) provide other incentives of equivalent financial value based upon the land cost per dwelling unit. All density bonus units will be deed restricted for a minimum 30-year period.

The City will adopt these State-mandated provisions into its density bonus ordinance and will specify the following addi-

tional regulatory concessions which may be provided:

- Reduced development fees
- Reduced open space/transportation dedication requirements
- Priority for permit processing
- Density transfer
- Reduced off street parking requirements
- Priority for utility connections

Program Actions through June 30, 1996: By mid 1995, the City will adopt a density bonus/affordable housing ordinance to implement State law and to identify specific regulatory concessions which may be granted in exchange for affordable housing. (See Table H-26.)

9. **Affordable Housing Financing:** Several important sources of financing are available in support of affordable housing development. These include mortgage revenue bonds, CHFA first-time homebuyer funds, funds available through the Affordable Housing Program of the Federal Home Loan Bank, and Low Income Housing Tax Credits.

Mortgage Revenue Bond Financing: The San Bernardino County Department of Economic and Community Development administers a mortgage revenue bond program to provide low interest financing for affordable multi-family rental housing and housing for first-time buyers.

The Multi-family Mortgage Revenue Bond Program provides below-market interest rate loans for development of new multi-family rental units in the County. Eligible projects must have at least 30 units. There are no limits to the maximum number of units in the proposed development. In accordance with federal, state, and local regulations, the following restrictions must be met:

- 40% of the units must be reserved for households with incomes at or below 60% of the County median income as defined/established by HUD; or
- 20% of the units must be reserved for households with incomes at or below 50% of the County median income as defined/established by HUD.

The Single-Family Mortgage Revenue Bond program provides affordable financing for first-time homebuyers. This program allows purchase prices of up to \$113,130 for resale homes and \$128,700 for new construction in San Bernardino County. The program requires that the household be a first-time homebuyer, or not have had an ownership interest in a principal residence in the past three years. In addition, maximum annual household income cannot exceed \$45,770 for new construction (limit may vary depending on family size) or \$39,800 for a resale home.

California Housing Finance Agency (CHFA): CHFA raises funds for mortgage financing through the sale of tax-exempt revenue bonds. CHFA uses proceeds from the sale of these bonds to provide below-market interest mortgage loans for the purchase, purchase and rehabilitation, and rehabilitation-related mortgage refinancing in selected areas. Through CHFA's mortgage assistance programs, individual borrowers are able to obtain very favorable mortgage interest rates.

Builders and developers apply for CHFA financing through approved mortgage lenders. CHFA also makes loans on single-family resale homes. S(Southern)-CHFA has initiated a recent bond issue available to San Bernardino County first-time homebuyers.

Federal Home Loan Bank (FHLB): The affordable housing programs mandated by the Financial Institutions Reform, Recovery and Enforcement act (FIRREA) of 1989 and the Community Reinvestment Act are now being implemented through

the 12 Federal Home Loan Banks. By law, the affordable housing provisions call for, among other things, a requirement for interest-subsidized loans to be extended to low income homebuyers.

The FHLB of San Francisco (Eleventh District - California, Arizona, and Nevada) initiated its Affordable Housing Program in early 1990. Through the Affordable Housing Program, the FHLB provides interest rate subsidies on advances to member banks that engage in lending for long-term, low income owner-occupied or affordable rental housing. Loans that qualify for the program include those used to finance homeownership by low income families, and loans which finance the purchase, construction or rehabilitation of rental housing, of which at least 20 percent will be occupied by very low income households. Non-profit organizations, for-profit developers, and public agencies may work with local FHLB members to package projects that meet program standards.

Low Income Housing Tax Credit (LIHTC): In 1986, Federal legislation enabled tax credits to be provided to individuals and corporations that invest in low income rental housing. Tax credits are usually sold to corporations and people with a high tax liability and the proceeds from the sale are used to create the housing. Each State is allocated an annual amount of tax credits, and accepts competitive applications from individuals, non-profit and for-profit organizations for credits. Generally, the State desires to serve the most low income people with the smallest amount of tax credit. Therefore, other sources of financing are essential and project features must be attractive.

Program Actions through June 30, 1996: The financing programs described above provide cost effective mechanisms the City can utilize to promote affordable rental and ownership opportunities. The City will encourage prospective developers to take advantage of available affordable housing financing and will advertise

programs by annual direct mail outreach to for profit and non-profit developers, placing promotional flyers at the City Hall public counter, and by periodically publicizing in the City newsletter. The City will also conduct an informational workshop with the development community to provide current information on affordable housing finance, and to convey the City's support for the development of quality affordable housing. (See Table H-26.)

REMOVAL OF GOVERNMENTAL CONSTRAINTS

State law requires the Housing Element to address, and where appropriate and legally possible, remove governmental constraints affecting the maintenance, improvement, and development of housing. The following programs are designed to lessen governmental constraints on housing development.

10. **Development Code/Specific Plan:** The City is preparing an entirely new Development Code which will establish development standards for existing as well as newly created zone districts. The City plans to use the Development Code as the primary tool to implement land use policy. Currently, land use category standards contained in the Specific Plan regulate development in the Specific Plan area. The City's long-term goal, however, is to rezone Specific Plan properties with standard zone districts.

The Chino Hills Development Code and Specific Plan will continue to allow a variety of housing types ranging from single-family residences to apartments. This variety of housing types works towards fulfilling the housing needs of all segments of the population. The following provisions in the Code in particular will facilitate the development and conservation of affordable housing:

- Provisions for second units
- Provisions for mobilehomes
- Incentives for affordable housing

(Refer to the Density Bonus/Affordable Housing Ordinance Program #8 for a discussion of these zoning provisions.)

Program Actions through June 30, 1996: In conjunction with this General Plan, the City will adopt an entirely new Development Code and Specific Plan by mid 1994. (See Table H-26.)

11. **Expedited Project Review:** A community's evaluation and review process for housing projects contributes to the cost of housing because holding costs incurred by developers are ultimately reflected in the unit's selling price. To minimize holding costs, Chino Hills will prioritize the review of affordable housing projects.

Program Actions through June 30, 1996: Include provisions in the Density Bonus/Affordable Housing Ordinance for fast track permit process for projects with an affordable housing component. The objective will be to have this process in place by mid-1995. (See Table H-26.)

12. **Development Fees:** Various fees and assessments are charged by the City to cover the costs of processing permits and to provide services and facilities to the project. The City inherited the County's fee schedule upon incorporation. As a result, the City is revising its fee schedule to encourage housing as well as non-residential development, while providing for adequate facilities. The fee schedule currently does not and will continue not to charge development fees in the Los Serranos area.

Program Actions through June 30, 1996: Include provisions in the Density Bonus/Affordable Housing Ordinance for reduced development fees for affordable housing projects. Adopt the ordinance by mid-1995. In the Los Serranos neighborhood, continue to provide reduced development fees to facilitate residential construction and improvements; review on an annual basis. (See Table H-26.)

PROVIDE HOUSING SERVICES

Housing support services ensure that special needs groups, such as the elderly and homeless, receive housing assistance not traditionally satisfied by programs for adequate sites. Housing services strive to help residents find affordable housing.

13. **Services for the Elderly:** Elderly households comprise eight percent of the City's households. Housing Element programs which assist the elderly include Section 8, rehabilitation, and mobilehome park programs. (See Programs 1, 4 and 5).

The City has access to a variety of services already available in the County for elderly households, such as in-home care, counseling, and reverse mortgages. In addition to these programs, the shared housing program assists seniors in locating roommates to share existing housing in the community, thereby doubling-up to reduce housing costs.

Program Actions through June 30, 1996: Contact Inland Mediation and other senior social service providers to pursue the implementation of services for the elderly in Chino Hills. (See Table H-26)

14. **Support Services for the Homeless:** The 1990 Census reports that no homeless persons live in Chino Hills and the Sheriff's Department reports that no homeless persons have been sighted in the community. However, the homeless population in some of the surrounding communities is quite high. It is possible that on occasion some homeless may pass through Chino Hills.

Program Actions through June 30, 1996: The City will coordinate with existing area social service providers in addressing the needs of the homeless population. In particular, the City will support the efforts of the San Bernardino County Homeless Coalition to coordinate homeless services. (See Table H-26.)

15. **Child Care Services:** Both parents in most family households and almost all single-parent households have to work to provide for their families. Affordable and quality child care has, thus, become a necessity. It is the intent of the City to develop and foster incentive driven programs to encourage commercial and industrial development to provide children's centers to meet the needs of the community.

Program Actions through June 30, 1996: Examine the City's Development Code to ensure appropriate provisions are made for childcare facilities. Evaluate different approaches to encourage the provision of childcare in commercial and industrial employment centers, including FAR bonuses as provided for under State density bonus law, and childcare impact fees. Expand City parks and recreation programs to provide after-school programs. (See Table H-26.)

16. **Fair Housing:** The Inland Mediation Board provides fair housing services in San Bernardino County, funded through CDBG monies. The following services are provided:

- Fair Housing (Education/Outreach/Mediation and Enforcement)
- Landlord/Tenant Mediation

Between July 1992 - May 1993, the Inland Mediation Board provided services to 46 Chino Hills households.

Program Actions through June 30, 1996: Chino Hills will advertise fair housing services through brochures at the public counter, and at the public library, and through periodic placement of advertisements in periodicals. The information provided at these locations will describe the services offered by the Inland Mediation Board. (See Table H-26.)

Table H-26
Housing Program Implementation Table

HOUSING PROGRAM	PROGRAM OBJECTIVE	PROGRAM ACTION (# UNITS TO BE ASSISTED)	FUNDING SOURCE	RESPONSIBLE AGENCY	TIME FRAME
CONSERVING & IMPROVING EXISTING AFFORDABLE HOUSING					
1. Housing Rehabilitation Program	Provide rehabilitation assistance to ensure maintenance of the older housing stock.	Assist in publicizing County rehabilitation programs to achieve improvement to 50 owner and 10 renter units. Pursue entitlement status.	CDBG; HOME	Community Development Department	Mid 1996
2. Code Enforcement	Bring substandard units into compliance with City codes.	Expand program to inform property owners of available rehabilitation assistance to correct code violations.	Department Budget	Building and Safety Department	Program Ongoing
3. Condominium Conversion Ordinance	Regulate conversion of rental housing to condominium ownership and ensure rights of existing tenants.	Evaluate adoption of a local condominium conversion ordinance. Provide tenants information on available assistance to purchase units.	Department Budget; County, State and Federal monies	Community Development Department	Mid-1996
4. Mobilehome Park Program	Preserve the City's mobilehome parks.	Ensure adequate notice for pending mobilehome conversions and meet with park tenants if the project becomes at-risk to conversion.	Department Budget	Community Development Department	Program Ongoing
5. Section 8 Rental Assistance Program/ Housing Vouchers	Extend rental subsidies to lower income families and elderly.	Advertise in local papers the opportunity for owners to list rental units with the Housing Authority. Continue subsidy to a minimum of 89 households.	HUD-Section 8 Cert. and Housing Vouchers; Department Budget	Community Development Department; County Housing Authority	Program Ongoing
6. Conservation of Existing and Future Affordable Units	Provide for continued affordability of the City's lower income housing stock.	Work with the County to preserve 114 affordable units in Woodview and Rolling Ridge.	Department Budget; CDBG	Community Development Department	Ongoing

Table 26
Housing Program Implementation Table
(Continued)

HOUSING PROGRAM	PROGRAM OBJECTIVE	PROGRAM ACTION (# UNITS TO BE ASSISTED)	FUNDING SOURCE	RESPONSIBLE AGENCY	TIME FRAME
PROVISION OF ADEQUATE HOUSING SITES					
7. Land Use Element	Provide a range of residential development opportunities through appropriate land use designations.	Maintain an up-to-date inventory of sites suitable for residential development. Accommodate the City's share of regional housing needs, identified as 880 dwelling units.	Department Budget	Community Development Department	Adopt Land Use Plan by mid-1994.
ASSIST IN DEVELOPMENT OF AFFORDABLE HOUSING					
8. Density Bonus/Affordable Housing Ordinance	Provide affordable units as part of market-rate projects.	Adopt a Density Bonus/Affordable Housing Ordinance to implement State law and specify regulatory concessions.	Department Budget	Community Development Department	Mid-1995
9. Affordable Housing Financing	Increase the supply of affordable housing	Encourage developers to take advantage of affordable housing financing through advertising program availability, and conduct an informational workshop.	Department Budget	Community Development Department; County Department of Economic and Community Development	Ongoing
REMOVE GOVERNMENTAL CONSTRAINTS					
10. Development Code/Specific Plan	Continue to allow a variety of housing types.	Adopt a Development Code and revised Specific Plan.	Department Budget	Community Development Department	1994
11. Expedited Project Review	Provide fast track permit processing for projects with an affordable component.	Adopt a Density Bonus/Affordable Housing Ordinance.	Department Budget	Community Development Department	Mid-1995
12. Development Fees	Reduce fees for affordable housing projects, and in low income neighborhoods	Adopt a Density Bonus/Affordable Housing Ordinance.	Department Budget	Community Development Department	Mid-1995

Table 26
Housing Program Implementation Table
(Continued)

HOUSING PROGRAM	PROGRAM OBJECTIVE	PROGRAM ACTION (# UNITS TO BE ASSISTED)	FUNDING SOURCE	RESPONSIBLE AGENCY	TIME FRAME
PROVIDE HOUSING SERVICES					
13. Services for the Elderly	Increase awareness of services available to senior households.	Contact social service providers to pursue home-sharing and other programs.	Department Budget	Community Development Department	Mid-1995
14. Support Services for the Homeless	Provide support services for the homeless.	Coordinate with existing social service providers, and San Bernardino County Homeless Coalition.	Department Budget	Community Development Department	Ongoing
15. Child Care Services	Provide additional child care services.	Expand parks and recreation after school programs and evaluate approaches to foster private developers to provide childcare facilities.	Department Budget	Community Development Department	Mid-1995
16. Fair Housing	Further fair housing practices in the community.	Provide informational brochures at the public counter and library, and place advertisements in local periodicals.	Department Budget	Community Development Department; Inland Mediation Board	Late 1994
<u>PROGRAM ACTIONS SUMMARY:</u> TOTAL UNITS TO BE CONSTRUCTED: 880 housing need; Of these, 92 are Very Low Income (VL), 89 Low Income (L), 147 Moderate Income (M), 552 Upper Income (U). TOTAL UNITS TO BE REHABILITATED: 60 (50 owner, 10 renter); Of these, 4 VL, 26 L, 30 M. TOTAL UNITS TO BE CONSERVED: 818 (125 owner, 25 renter); Of these, 89 VL and 114 L.					

REGIONAL HOUSING NEEDS WORKSHEET

Background

The regional housing growth study, completed in 1992, was the first study to provide a comprehensive analysis of housing needs in the region. It was the first study to provide a comprehensive analysis of housing needs in the region. It was the first study to provide a comprehensive analysis of housing needs in the region.

The study was conducted by the Regional Housing Study Committee, which was established in 1991. The study was the first of its kind in the region. It was the first study to provide a comprehensive analysis of housing needs in the region.

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APPENDIX A

REGIONAL HOUSING NEEDS WORKSHEET

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Region: _____	Worksheet: _____
Page: _____	Date: _____

REGIONAL HOUSING NEEDS WORKSHEET

Background

The regional housing growth needs for Chino Hills were developed using the SCAG 1988 Regional Housing Needs Assessment (RHNA) methodology. Regional growth needs are defined as the number of units that would have to be added in each jurisdiction to accommodate the forecasted growth in the number of households by July 1, 1999, as well as the number of units that would have to be added to compensate for anticipated demolitions and changes to achieve an "ideal" vacancy rate.

The Future Need additional units are then further broken down by the income levels of the households that they would be supplied for. The four household income categories used are defined by state law. They are "very low" (less than 50% of median), "low" (50% to 80% of median), "moderate" (80% to 120% of median), and "upper" (more than 120% of median).

The state housing law requires that in allocating this percentage distribution by income level for each city, further "impaction," or concentration of lower income households, be avoided. This means that the percentage distribution of very low and low income households accommodated by additional units should be less than the existing percentage of such lower income households in jurisdictions that already exceed the regional

average percentage of such households. These jurisdictions with higher than average concentrations of lower income households are called "impacted" jurisdictions.

The RHNA deals with the "avoidance of impaction" issue by allocating reduced percentages of lower income and increased percentages of middle and upper income units to impacted jurisdictions, while doing the reverse for non-impacted jurisdictions. All jurisdictions are given Future Need lower income percentages 25% closer to the regional average percentage than the percentage now existing in each jurisdiction. (For example, if 40% of households in the region were lower income and 50% of the households in impacted jurisdiction "X" were lower income, the Future Need additional units would be 47.5% lower income. Likewise, a non-impacted jurisdiction "Y" with 30% of its households now lower income, would be allocated a 32.5% lower income proportion for its additional units). The City has utilized State HCD methodology for determining the avoidance of impaction adjustment to income.

Methodology

The total future need for the RHNA is determined according to a method which accounts for growth in the number of households expected, the need to achieve ideal vacancy rates, and compensation for anticipated demolition.

$$\text{Future Need} = \text{Household Growth} + \text{Vacancy Adjustment} + \text{Demolition Adjustment} \\ 7/94-7/99$$

Household Growth has been estimated by Tischler Associates as part of the General Plan Economic Development Element. According to these projections, an estimated 3,100 households will be added to the Chino Hills housing stock between July 1994 and July 1999.

Using the RHNA formula, the vacancy adjustment for Chino Hills can be calculated as follows:

Total Dus	Single-Fam Dus	Ideal Vacancy Rate (1)	Actual Vacancy Rate (2)	Existing Vacancy Need (3)	Additional Vacancy Need (4)	= Total Vacancy Adjustment (5)
16,286	.785	2.65	8.72	(-988)	82	(-906)

(1) Ideal vacancy rate calculated by multiplying single-family unit proportion by 2 and remaining proportion by 5, to equal a 2% vacancy rate for single-family units, and 5% vacancy rate for other units.

(2) 1993 Department of Finance.

(3) Additional (or fewer) units needed to bring vacancy rate to ideal. Derived by subtracting (actual vacancy rate - Total DUs) from (ideal vacancy rate - total DUs).

(4) Additional number of units needed to maintain ideal vacancy rates as jurisdiction grows. Determined by multiplying 5-year household growth by City's ideal vacancy rate.

(5) Total number of units which must be added (or credited against demand) to attain and maintain ideal rates. It is the sum of existing vacancy need and additional vacancy need.

The demolition adjustment is determined by using data on actual demolitions over the preceding three-year period, and projecting demolitions over the ensuing five years. As no residential demolitions occurred in Chino Hills over the past three years, and no sig-

nificant demolition activity is anticipated, the City's demolition adjustment is zero.

Given these three factors, Chino Hills regional housing growth needs for the 7/94-7/99 period can be determined as follows:

3,100 (Household Growth)	+	(-900) (Vacancy Adjust- ment)	+	0 (Demolition Adjust- ment)	=	2,200 Units
--------------------------------	---	--	---	--------------------------------------	---	----------------

This five-year housing growth need is then pro-rated to the two year period remaining in the cycle for the City's first housing element (7/94-6/96); future regional growth figures

for the City will represent a full five year period. The City's future need is then divided into the four HUD income groups as follows:

	Chino Hills Income Distribution	Regional Income Distribution	25% Avoidance Impaction Adjustment	5 Year Regional Needs by Income Category	2 Year Regional Needs by Income Category
Very Low Income	6.2%	23.4%	10.5%	231	92
Low Income	8.1%	15.9%	10.1%	222	89
Moderate Income	15.7%	19.9%	16.7%	368	147
Upper Income	70.0%	40.8%	62.7%	<u>1,379</u>	<u>552</u>
				2,200	880

Circulation Element

Year	1970	1971	1972	1973	1974	1975
Population	100	100	100	100	100	100
Urban	50	50	50	50	50	50
Rural	50	50	50	50	50	50
Male	50	50	50	50	50	50
Female	50	50	50	50	50	50
Age 0-14	25	25	25	25	25	25
Age 15-64	50	50	50	50	50	50
Age 65+	25	25	25	25	25	25
White	75	75	75	75	75	75
Black	25	25	25	25	25	25
Hispanic	0	0	0	0	0	0
Other	0	0	0	0	0	0

The following table shows the population of the United States in 1970, by race, sex, and age. The population of the United States in 1970 was 205,457,000. The population of the United States in 1970, by race, sex, and age, is shown in the following table.

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Year	1970	1971	1972	1973	1974	1975
Population	100	100	100	100	100	100
Urban	50	50	50	50	50	50
Rural	50	50	50	50	50	50
Male	50	50	50	50	50	50
Female	50	50	50	50	50	50
Age 0-14	25	25	25	25	25	25
Age 15-64	50	50	50	50	50	50
Age 65+	25	25	25	25	25	25
White	75	75	75	75	75	75
Black	25	25	25	25	25	25
Hispanic	0	0	0	0	0	0
Other	0	0	0	0	0	0

The following table shows the population of the United States in 1970, by race, sex, and age. The population of the United States in 1970 was 205,457,000. The population of the United States in 1970, by race, sex, and age, is shown in the following table.

1. The population of the United States in 1970, by race, sex, and age, is shown in the following table.

2. The population of the United States in 1970, by race, sex, and age, is shown in the following table.

3. The population of the United States in 1970, by race, sex, and age, is shown in the following table.

4. The population of the United States in 1970, by race, sex, and age, is shown in the following table.

Circulation Element

Chapter 3 Circulation Element

A. INTRODUCTION

The Circulation Element provides goals, objectives and policies that relate to the development of roadways, transit services, and bikeways. The Circulation Plan includes three components: a Roadway Plan map; a Transit Plan map; and a Bikeway Plan map. Standards and specifications for transportation facilities are also provided.

Purpose of The Element

The purpose of the Circulation Element is to establish standards for the design and operation of the City's roadway system, and to define a future system to meet those standards. Transit services and bikeways are also defined within the Element.

Beginning with a major goal to maintain acceptable levels of service on the circulation system, the element provides focussed goals that outline more specific strategies to achieve the major goal. Objectives and policies are also provided to further define the strategies for achieving these goals.

The Circulation Plan maps identify various classifications of roadways transit services and bikeways within the City. Standards for the design of each roadway classification are provided in the element, as are standards for the design of transit facilities and bikeways within the City.

Conditions In 1993

Assembly Bill (AB) 471, as subsequently modified by AB 1791, requires every urbanized county with a population of 50,000 or more to adopt a Congestion Management Plan (CMP). The San Bernardino County CMP identifies both Super Streets and State Highways. A minimum of LOS E is required on these roadways unless a roadway was operating at a worse level when the baseline counts were conducted. Cities will be

required to maintain LOS E or better operations on the CMP roadways. If a jurisdiction fails to maintain an LOS E on these streets, it may lose its gasoline tax revenues.

Regional access to Chino Hills is provided via the following Congestion Management Program (CMP) roadways: Chino Valley Freeway (State Route 71), Grand Avenue, and Carbon Canyon Road. Other significant roadways in the City include Chino Avenue, Eucalyptus Avenue, Chino Hills Parkway, Peyton Drive, Pipeline Avenue, and Soquel Canyon Parkway. The intersections of the Chino Valley Freeway at Chino Hills Parkway and at Central Avenue are CMP intersections.

In general the roadway system in Chino Hills operates at acceptable levels of service, but there are some congested locations. These include:

- Carbon Canyon Road at the west City boundary;
- Chino Hills Parkway between Chino Valley Freeway and Pipeline Road; and
- Chino Valley Freeway.

The City is currently served by Omnitrans bus routes No. 65 (Central Avenue) and No. 72 (Monte Vista Avenue, Pipeline Avenue, Grand Avenue, Chino Valley Freeway). Bus fares are seventy-five cents for the general public, thirty cents for senior and disabled citizens, and free for children age four and under. The transfer fee is ten cents for the general public and free for senior and disabled citizens. There are currently no transit services from Chino Hills to the Brea Mall.

Transit services to other counties and/or other cities can be obtained at two regional transfer centers located outside of Chino Hills: the Diamond Bar park-and-ride lot at Diamond Bar Boulevard/SR-60, and the Montclair Transcenter at Arrow Highway and Monte Vista Avenue. The services at these transfer

centers include intercounty express bus service and commuter rail service.

B. CIRCULATION ISSUES

In 1991, the Chino Hills Specific Plan was updated to reflect changes in the land use plan, as well as in the planned infrastructure to support it. The Specific Plan was based on data and assumptions available in 1991 or before. Some of the recommendations are no longer valid. The following discussion summarizes the issues facing the City.

Impacts of the Chino Valley Freeway Improvements

The largest regional roadway within Chino Hills, State Route 71 (the Chino Valley Freeway) is scheduled to be improved from a suburban highway to a full freeway. Funds have been programmed for the improvements from Los Angeles County to the Riverside County Line, near the southern boundary of the City. Funds have not yet been programmed to complete the improvements between the Riverside County Line and the Riverside Freeway (State Route 91), a distance of roughly three miles.

The Chino Valley Freeway will have a significant impact on traffic within Chino Hills, both during the construction period and after it is completed. Upgrading the "gap" in Riverside County to full freeway standards and with the same number of lanes as the freeway will have in Chino Hills is essential to the successful future operation of the freeway. Issues include:

- (a) How will the Chino Valley Freeway affect regional traffic passing through Chino Hills, particularly along:
 - Carbon Canyon Road;
 - Grand Avenue; and
 - Peyton Drive?
- (b) How will the Chino Valley Freeway affect local traffic patterns as some intersections

are converted to full freeway interchanges, and others are removed entirely?

- (c) Will levels of service on Chino Hills arterials and intersections improve when the Chino Valley Freeway is completed, and if so, by how much?
- (d) Can regional support for the completion of the Chino Valley Freeway to SR-91 be achieved?

Impacts of Regional Growth

Growth is continuing throughout Southern California, and will continue to add to the number of regional trips passing through Chino Hills. Whether or not new development occurs within the City, regional growth will create additional demands on Chino Hills roadways. Issues include:

- (a) How much will regional through-trips increase on Chino Hills roadways?
- (b) What percentage of trips in Chino Hills represent through trips, and will that percentage change in the future?

Need for Soquel Canyon Parkway

The Chino Hills Specific Plan recommended that Soquel Canyon Parkway be extended through Chino Hills into the City of Brea. While this roadway will provide needed capacity to facilitate regional traffic passing through Chino Hills, it is also a very expensive project. Alternative improvements will be needed to replace Soquel Canyon Parkway if it is removed from the Circulation Element. These alternative improvements may be even more costly. Issues include:

- (a) What other improvements would be needed if Soquel Canyon Parkway is not extended into Brea?
- (b) What are the plans of the City of Brea relative to Soquel Canyon Parkway, and can the plans of Chino Hills and Brea be coordinated?

- (c) What is the regional responsibility for funding the extension of Soquel Canyon Parkway?

Need for Tonner Canyon Road

The Chino Hills Specific Plan recommended that Tonner Canyon Road be extended to the west into Diamond Bar or Brea. This is an expensive project that serves a relatively small amount of new development, but serves a large amount of regional traffic. If this project is not built, other improvements may be needed. The final solution should be coordinated with the Cities of Diamond Bar and Brea.

Issues include:

- (a) What improvements would be needed if Tonner Canyon Road is not built?
- (b) What are the plans of Diamond Bar and Brea for Tonner Canyon Road, and can the plans of Chino Hills and these cities be coordinated?

Transit and TDM Issues

Currently there is very little transit service (i.e., bus, train, etc.) in Chino Hills. Transit development is occurring in the city, however, and new opportunities for improving transit may arise. Issues include:

- (a) How can access be provided to new commuter rail stations on the San Bernardino to Los Angeles, Riverside to Los Angeles, and Riverside to Orange County corridors?
- (b) What new transit services should be identified in the Transit Plan?
- (c) Will trip reduction goals be needed to maintain desired levels of service on Chino Hills roadways?

Employment Growth East of the Chino Valley Freeway

The Land Use Plan includes substantial employment growth in the City east of the Chino Valley Freeway. This will create new traffic

demand, particularly during the peak commute hours. It will also create a sizeable daytime employee population in the city. Issues include:

- (a) Will the Roadway Plan accommodate the traffic demands of the new employees?
- (b) Will new roadway improvements be needed to mitigate traffic impacts from the new industrial and commercial developments east of the Chino Valley Freeway?

C. GOALS, OBJECTIVES, AND POLICIES

This section provides the goals, objectives and policies that govern circulation related decisions. There is a single major goal, followed by focussed goals, objectives, and policies.

Major Goal 2

A high quality of life for all residents

Focused Goal 2-3

A balanced and efficient transportation system

Focused Goal 2-4

High quality public facilities and services

Objective 1

Achieve and maintain Level of Service "D" on all roadway links and at all roadway intersections, with the exception of intersections within 1/2 mile of the State Route 71 Expressway/Freeway, where Level of Service "E" shall be maintained.

Objective 2

Maintain San Bernardino County Congestion Management Program (CMP) highway system roadway links and intersections at Level of Service "E".

Policy 2-1

In Objective #1, Level of Service "D" is defined as 90 percent of capacity. Level of Service "E" is defined 100 percent of capacity. Capacity is defined as the maximum volume that can be carried on a roadway link or intersection in one hour.

Policy 2-2

The City of Chino Hills strongly supports and will actively advocate completion of the Chino Valley Freeway upgrade to full freeway standards from the city limits to State Route 91, including an improved Chino Valley Freeway/SR-91 interchange.

Policy 2-3

Construction of Tonner Canyon Road, while included in the Roadway Plan, is considered by the City of Chino Hills to be a regional project, and to the extent that this roadway serves regional needs, should be funded and developed by a regional agency, the state, or some combination of these agencies. The City views full construction of Tonner Canyon Road to the 57 Freeway as achievable within the timeframe of the General Plan, and will focus its efforts on completing this roadway.

Policy 2-4

The city supports the construction of an interchange on the Chino Valley Freeway at a location roughly halfway between the Euclid Avenue/Butterfield Ranch interchange and the Rt 91 Freeway, in order to provide future access to the southern portion of Chino Hills.

Policy 2-5

All improvements to and maintenance of the portion of Chino Hills Parkway/Carbon Canyon Road which is part of State Route 142 shall be the responsibility of the State of California. The City of Chino Hills will oppose any improvements along this roadway which are inconsistent with the Roadway Plan.

Policy 2-6

Work with local, regional, and state agencies to ensure that planned circulation improvements are compatible with and contribute to the effectiveness of the regional transportation system.

Policy 2-7

Ensure, through the use of Environmental Impact Reports and mitigation requirements, that discretionary development projects do not cause roadway congestion in excess of acceptable levels of service within Chino Hills, or on CMP roadway links or intersections within five miles of the projects.

Policy 2-8

The City will maintain close coordination with Caltrans and the regional agencies to ensure the timely design and construction of important regional roadways such as the Chino Valley Freeway, Soquel Canyon Parkway, and Tonner Canyon Road.

Policy 2-9

Require all development projects to meet mandatory standards with regard to vertical and horizontal alignments, access control, rights-of-way, cross-sections, intersections, sidewalks, curbs and gutters, cul-de-sacs, driveway widths and grades, right-of-way dedication and improvements, and curb cuts for the disabled.

Policy 2-10

Prohibit direct driveway access from individual residences to major arterials, major highways, and secondary highways.

Policy 2-11

Develop a scenic highway overlay which defines the physical boundaries of the scenic corridors for Carbon Canyon Road and Soquel Canyon Parkway.

Policy 2-12

Formulate development standards to control site design and building placement, setbacks, access roads, landscaping, roads, pedestrian walkways, parking and storage areas, above ground utilities, grading, and signs within scenic corridors.

Policy 2-13

Work closely with state officials to obtain legislation designating Carbon Canyon Road as a Scenic Highway, upgrading its current status as a candidate for official designation.

Policy 2-14

Work with Omnitrans and other bus providers to expand transit routes serving Chino Hills and the surrounding communities.

Policy 2-15

Establish one or more park-and-ride lots to be located near freeway interchanges, and require secure and easily accessible park-and-ride facilities.

Policy 2-16

Require bus turn-outs and shelters in residential, commercial, and industrial public use areas.

Policy 2-17

Adopt a citywide trip reduction ordinance, consistent with San Bernardino County CMP requirements, to reduce traffic congestion and improve air quality.

Policy 2-18

Retain the "switchbacks" on Carbon Canyon Road between Feldstar Drive and the Western Hills Country Club.

Policy 2-19

Canon Lane should be extended to connect Carbon Canyon Road and Eucalyptus Avenue. This roadway shall be ungated and public, and built to collector standards.

Policy 2-20

With regard to Tonner Canyon Road, the City of Chino Hills proposes no specific alignment, but supports the development of this roadway in a manner which minimizes environmental effects and visual impacts.

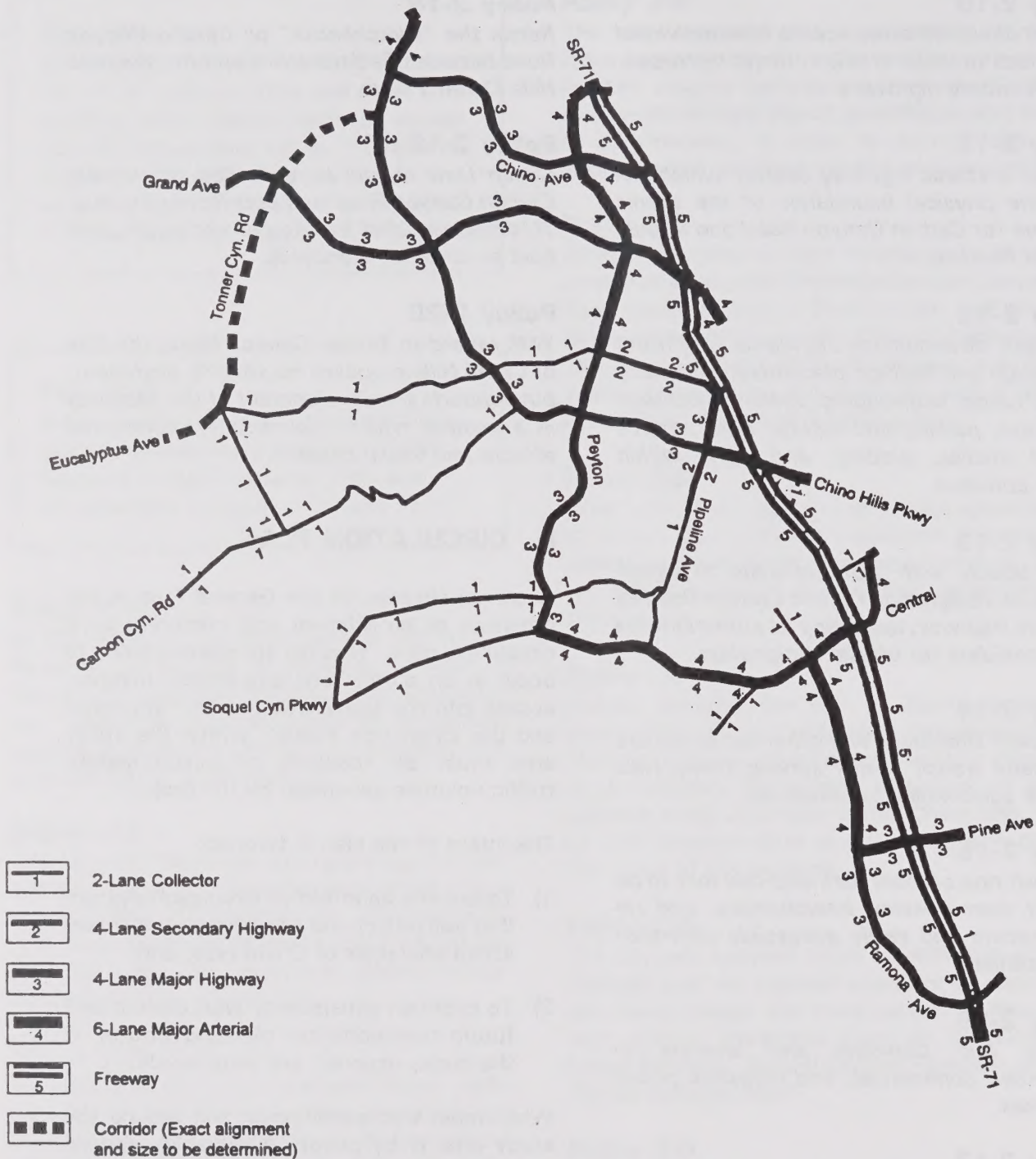
D. CIRCULATION PLAN

A critical element of the General Plan is the provision of an efficient and comprehensive circulation plan. In order for development to occur in an orderly and systematic manner, access into the study area must be improved and the circulation system within the study area must be adequate to accommodate traffic volumes generated by the project.

The intent of the plan is twofold:

- 1) To provide an effective circulation system that will reflect and compliment the established character of Chino Hills; and
- 2) To maintain consistency with current and future transportation planning efforts at the state, regional, and local levels.

While most transportation in and around the study area is by private automobile, special consideration has been given to public transit and other alternative modes of transportation, pedestrian access, and bikeways.



SOURCE: Barton Aschman Associates, Inc., November 1993

not to scale

Figure C-1
Roadway Plan

Roadway Plan

Figure C-1 illustrates the Roadway Plan for Chino Hills. The figure indicates tentative alignments for roadways which support the concept for desired traffic movements through the area. Alignments may be refined as preliminary engineering is initiated. As individual projects are undertaken, the City will enter into cooperative studies with the State and other public or private entities to determine final alignment and configuration of interchange/intersection design. All plans for these facilities should be consistent with state, regional, and local transportation plans and policies.

The Roadway Plan includes the following improvements:

- Peyton Drive - widen to a 6-lane major arterial between Grand Avenue and Eucalyptus Avenue, widen to a 4-lane major highway between Eucalyptus Avenue and Chino Hills Parkway, and extend as a 4-lane major highway between Woodview Road and Soquel Canyon Parkway;
- Eucalyptus Avenue - widen to 4 lanes between Peyton Drive and Pipeline Avenue and complete the gap as a 2-lane collector just west of Peyton Drive;
- Chino Avenue - restripe to 4 lanes, between the west City boundary and Peyton Drive, and extend as a 6-lane major arterial from Emerald Way to the Chino Valley Freeway;
- Soquel Canyon Parkway - widen to a 6-lane major arterial between the Chino Valley Freeway and Pipeline Avenue and extend as a 6-lane major arterial to the west City boundary;
- Ramona Avenue - extend as a 4-lane major highway between Butterfield Ranch Road and Pine Avenue, extend as a 6-lane major arterial between Pine Avenue and Soquel Canyon Parkway, and extend as a 4-lane collector between Soquel Canyon Parkway and Yorba Avenue;

- Chino Hills Parkway (State Route) - widen to a 6-lane major arterial from Pipeline Avenue to the east City boundary;
- Tonner Canyon Road - Construct Tonner Canyon Road as a 4-lane major highway between Chino Hills Parkway and the west City boundary; and
- Remove the connections of Pomona-Rincon Road with Soquel Canyon Parkway, both on the north and south sides of the intersection.

Transit Plan

Projected population growth, combined with significant commercial and industrial development in Chino Hills will greatly increase the need for additional transit services in the City. This will be somewhat difficult to accomplish, however, because of the City's location near the boundaries of San Bernardino, Los Angeles, Riverside and Orange counties, which makes coordination among a large number of transit agencies necessary.

Local transit services should be expanded to serve more of the residential areas of Chino Hills and provide access to the major new developments to be built under the Land Use Plan. These new local services should include:

- Service along Peyton Drive from Riverside Drive to Soquel Canyon Road to Central, and along Central Avenue to Chino Hills Parkway; and
- Increased frequency on Omnitrans route #72 along Grand Avenue, Chino Hills Parkway, and Pipeline Avenue.

In addition to these local services, regional transit service should be provided to provide transit access to other counties. These regional services should include:

- Grand Avenue service from Chino to Diamond Bar, passing through Chino Hills;

- Carbon Canyon Road service from Chino to Brea, including the Brea Mall passing through Chino Hills;
- The Chino Valley Freeway commuter express service to Los Angeles via SR-60; and
- Park-and-Ride lots near the Chino Valley Freeway.

These services will provide enhanced access to Chino Hills residents and, at the same time, create alternative transportation options that will reduce vehicle trips and improve the level of service on the roadway system. Figure C-2 shows the Transit Plan.

Bikeway Plan

The bicycle and pedestrian paths provide an energy efficient alternative to the automobile, help to link the commercial, residential and open space uses within a village, and contribute to the sense of cohesiveness within a village.

The Bikeway Plan is shown in Figure C-3.

E. CLASSIFICATIONS AND STANDARDS

There are seven classifications of local roadways in the City of Chino Hills. These classifications are:

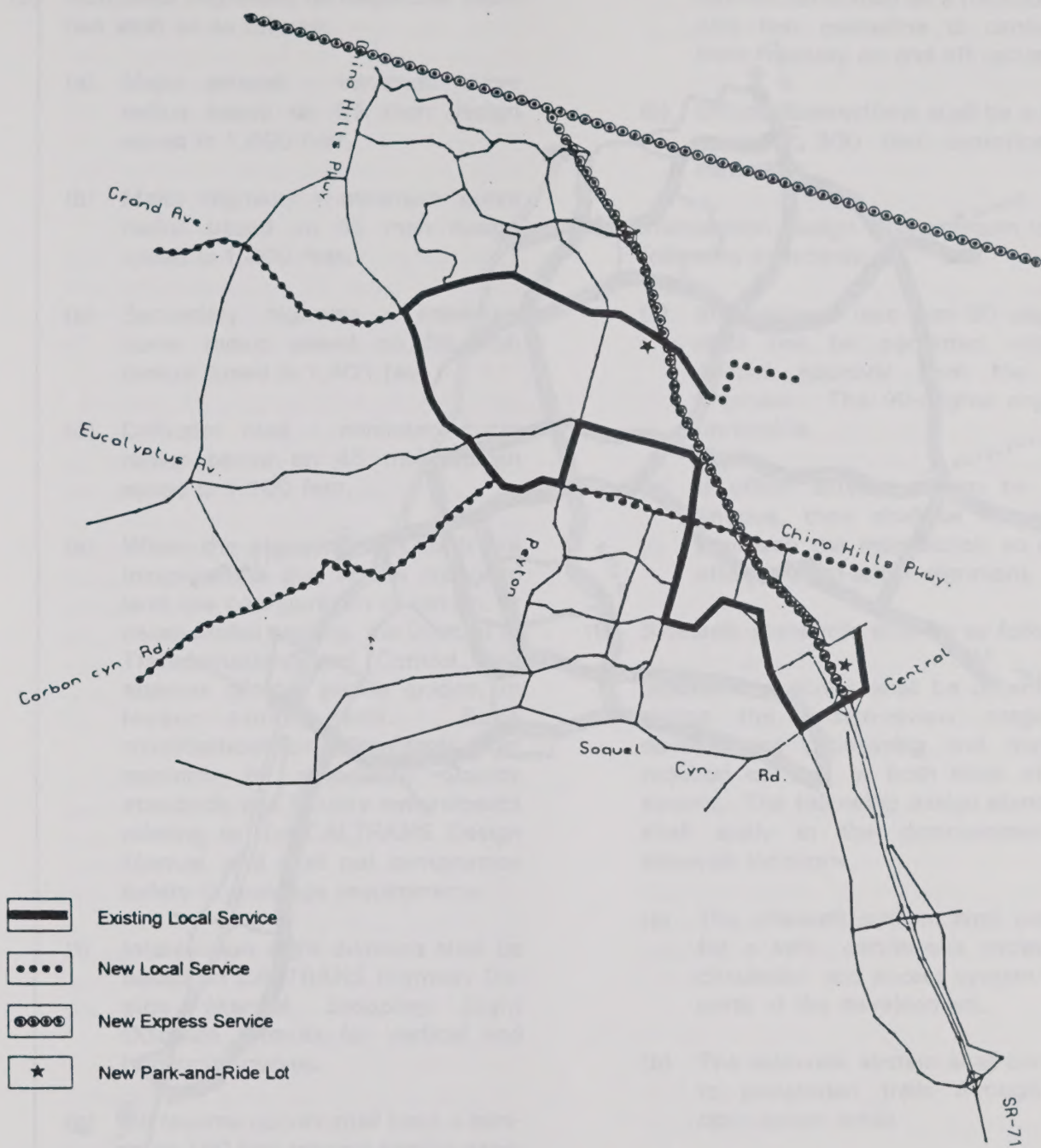
- Major Arterial - A six-lane divided or undivided roadway designed to carry large volumes of local and regional traffic.
- Major Highway - A four-lane divided or undivided roadway designed to carry local and regional traffic.
- Secondary Highway - A four-lane undivided roadway designed to carry predominantly local traffic.
- Collector Street and Rural Collector - A two-lane undivided roadway designed to serve local circulation.
- Local Street and Restricted Local Street - A two-lane undivided roadway designed to provide local access within communities.

Transit services are classified as local and express. Three classes of bicycle paths are also defined. The bicycle path classes include:

- Class I bicycle paths - these have exclusive rights-of-way and serve bicyclists and pedestrians exclusively;
- Class II bicycle paths - these are located along major arterials and major and secondary highways; and
- Class III bicycle paths - these exist on expanded sidewalks along collector and local roads.

Roadway Standards and Specifications

- (1) Standards and specifications for transportation facilities and all work within the road rights-of-way shall conform to the City's Standards and Specification Manual unless specifically modified herein.
- (2) Vertical alignment for respective facilities shall be as follows:
 - (a) Major arterial maximum grade - 6%
 - (b) Major highway maximum grade - 8%
 - (c) Secondary highway maximum grade 12%
 - (d) Collector road maximum grade - 12%
 - (e) Local road maximum grade - 12%
 - (f) Local and collector roads maximum grade may equal 14% for short distances not to exceed 500'
 - (g) Grades within 100' of intersections shall be a maximum of 4%.



-  Existing Local Service
-  New Local Service
-  New Express Service
-  New Park-and-Ride Lot

SOURCE: Barton Aschman Associates, Inc., November 1993

not to scale

Figure C-2
Transit Plan



SOURCE: Barton Aschman Associates, Inc., November 1993

not to scale

Figure C-3
Bikeway Plan

(3) Horizontal alignment for respective facilities shall be as follows:

- (a) Major arterial - minimum curve radius based on 55 mph design speed is 1,800 feet.
- (b) Major highway - minimum curve radius based on 55 mph design speed is 1,800 feet.
- (c) Secondary highway - minimum curve radius based on 50 mph design speed is 1,400 feet.
- (d) Collector road - minimum curve radius based on 45 mph design speed is 1,100 feet.
- (e) When the standards set forth are inappropriate due to the proposed land use configuration or terrain, or cause undue grading, the Director of Transportation/Flood Control may approve greater profile grades, or lesser curve radii. Such modifications to the Standards must conform to associated County standards and County requirements relating to the CALTRANS Design Manual, and shall not compromise safety or drainage requirements.
- (f) Intersection sight distance shall be based on CALTRANS Highway Design Manual Stopping Sight Distance formula for vertical and horizontal curves.
- (g) All reverse curves shall have a minimum 100 feet tangent section separating the curves.

(4) Access control standards are as follows:

- (a) No direct driveway access from individual residence onto major arterials, major highways, secondary highways or onto the designated Rural Collector portions of Woodview, Eucalyptus and Pipeline Avenues shall be permitted.

Intersections shall be a minimum of 400 feet centerline to centerline from freeway on and off ramps.

- (b) Offset intersections shall be a minimum of 300 feet centerline to centerline.

(5) Intersection design shall conform to the following standards:

- (a) Intersections less than 80 degrees shall not be permitted without special approval from the City Engineer. The 90-degree angle is preferable.
- (b) If offset streets are to be continuous, they shall be curved to approach the intersection so as to effect a right-angle alignment.

(6) Sidewalk standards shall be as follows:

Sidewalk locations shall be determined during the design-review stage of development processing and may be required on one or both sides of the streets. The following design standards shall apply in the determination of sidewalk locations.

- (a) The sidewalk system shall provide for a safe, continuous pedestrian circulation and access system to all parts of the development.
- (b) The sidewalk system shall connect to pedestrian trails through the open-space areas.
- (c) Requirements for sidewalks will be intensified in the following areas with sidewalks being required on both sides of the streets approaching or extending through Village Cores, high density developments in Preferred Development Envelopes, schools, bus stops, parks, community centers, major commercial centers, and other focal points.

- (d) Sidewalk requirements will be reduced in Development Sensitive Areas and outlying areas.
 - (e) Sidewalks shall be a minimum clear width of 4 feet.
 - (f) Sidewalks shall be constructed of concrete.
- (7) Cul-de-sac standards shall be as follows:
- (a) Cul-de-sacs shall have a minimum paved radius of 40 feet.
- (8) Curb cuts for handicapped access shall be provided on all roadways as required by State law.
- (9) Private streets shall be constructed in accordance with PUD standards.
- (10) No parking, except for emergency parking, shall be allowed on any street which has four or more lanes, (includes major arterials, major highways, and secondary highways).
- (11) The following streets shall have landscaped center medians:
- (a) Peyton Drive from Soquel Canyon Parkway to intersection with Riverside Drive and the Chino Valley Freeway
 - (b) * Grand Avenue
 - (c) * Tonner Canyon Road (Secondary Highway up to 3,000 feet south of Grand Avenue)
 - (d) * Chino Hills Parkway
 - (e) Chino Avenue from the Chino Valley Freeway west to Peyton Drive
 - (f) Soquel Canyon Parkway from the Chino Valley Freeway west to Ramona Avenue
 - (g) Ramona Avenue from Los Serranos Avenue south to Pine Avenue

* Grand Avenue, Tonner Canyon Road and Chino Hills Parkway shall have medians located adjacent to the developed and commercial or village core areas; medians may not be required in the steeper, more rural areas. The precise locations shall be determined at the design review stage of development.

- (12) Rolled curbs may be permitted on local streets in areas of equestrian use and where standard curbs will not be required for drainage control.

Transit Standards and Specifications

- (1) Bus turnouts and bus shelters shall be provided in village core areas and other commercial, industrial and public use areas. These facilities shall be designed to maximize security features and shall be located in proximity to both traffic signals and pedestrian crosswalks, so as to provide for ease of ingress for buses and ease of access for pedestrians, respectively.
- (2) Park-and-ride areas shall be provided at village cores, general commercial areas and mixed land use areas. These facilities shall be designed to maximize security and provide ease of access. Each park-and -ride lot shall have a capacity equal to 10% of the required parking of the adjacent commercial area, except that no more than 50 spaces per facility shall be constructed.
- (3) All park-and-ride lots shall be acquired, constructed and maintained by the appropriate local entity.

Bikeway Standards and Specifications

- (1) There shall be three classes of bicycle paths in Chino Hills:
 - (a) Class I Bicycle Paths - are facilities with exclusive rights-of-way, separated from other vehicular rights-of-way, with cross flows by motorists minimized, serving the

exclusive use of bicycles and pedestrians.

(b) Class II Bicycle Paths - are bicycle lanes for preferential use by bicycles established within the paved area of highways and designated by specific lines of demarcation between the areas reserved for bicycles and lanes to be occupied by motor vehicles.

(c) Class III Bicycle Paths - are sidewalks within the rights-of-way, expanded to 8 feet in width, and designated with signs to serve both pedestrians and bicycles, located along collector or local streets.

(2) The following standards shall apply to Class I Bicycle Paths:

(a) Bicycle paths shall be two-way routes.

(b) The minimum paved width for a two-way bike path shall be 8 feet. A minimum 2-foot wide graded area shall be provided adjacent to the pavement.

(c) A minimum 2-foot horizontal clearance to obstructions shall be provided adjacent to the pavement.

(d) The vertical clearance to obstructions across the clear width of the path shall be a minimum of 8 feet.

(e) Bike paths closer than 5 feet from the edge of a highway shall include a physical divider such as fencing, berms, trees or shrubbery to prevent bicyclists from encroaching onto the highway.

(3) The following standards shall apply to Class II Bicycle Paths:

(a) Bike lanes shall be one-way facilities in the direction of traffic flow.

(b) Where required, bike lanes shall occupy the emergency parking lane along major arterials, major highways and secondary highways, with widths of 5 (five) to 8 (eight) feet, or as approved by the Director of Public Works. Painted demarcation lines shall define the bicycle lane, with appropriate freestanding and pavement signs.

(4) The following standards shall apply to Class III Bicycle Paths:

(a) The Bicycle/Pedestrian Path shall be provided by expanding the width of a standard sidewalk to 8 feet along collector or local roads.

(b) Standard sidewalk construction requirements shall apply.

(c) Signs shall be posted at intervals, directing bicyclists and pedestrians to the appropriate side of the pathway; pathway divisions may also be indicated through appropriate signs painted on the pathway at intervals.

(5) Drainage inlet grates, manhole covers, driveways, etc., on bikeways should be designed and installed in a manner that provides an adequate surface for bicyclists.

(6) Uniform signs, markings, and traffic control devices are mandatory and shall conform to the requirements of State law.

(7) Commuter bicycle paths (Class II Bicycle Paths) shall be provided adjacent to the following roadways:

(a) Chino Hills Parkway and Carbon Canyon Road, extending from the Chino Valley Freeway, southwest to Orange County.

(b) Peyton Drive, extending from Soquel Canyon Parkway, north to

the Riverside Drive intersection with the Chino Valley Freeway.

- (c) Grand Avenue, extending from the Chino Valley Freeway, west to the Los Angeles County line.
 - (d) Chino Hills Parkway, extending from State Highway 60, south to Carbon Canyon Road, and extending east on Chino Hills Parkway to the Chino Valley Freeway. A reduced bike path width may be necessary because of right-of-way limitations. However, safety concerns must not be compromised.
- (8) Additional local bicycle and pedestrian pathways shall be required in each development to provide a local trail network for each village with links to the regional systems and to adjacent open space areas. Class I type pathways which are proposed in the development may be substituted for other mandatory Class II type pathways.
- (9) Pedestrian and bicycle pathways which are not associated with roadways shall be located to take advantage of attractive natural drainage areas whenever possible; landscaping and lighting shall be provided to create an attractive environment in the area of pedestrian and bike pathways to encourage their use.
- (10) All bike and pedestrian pathways shall have adequate lighting and signing to provide for the safety of the users.

Cross Section Drawings

Figures C-4 through C-12 provide cross sections for the roadway classifications, sidewalks, and bicycle paths.

F. CONCLUSION TO THE CIRCULATION ELEMENT

In keeping with the vision for the City of Chino Hills, the Circulation Element preserves the following key features:

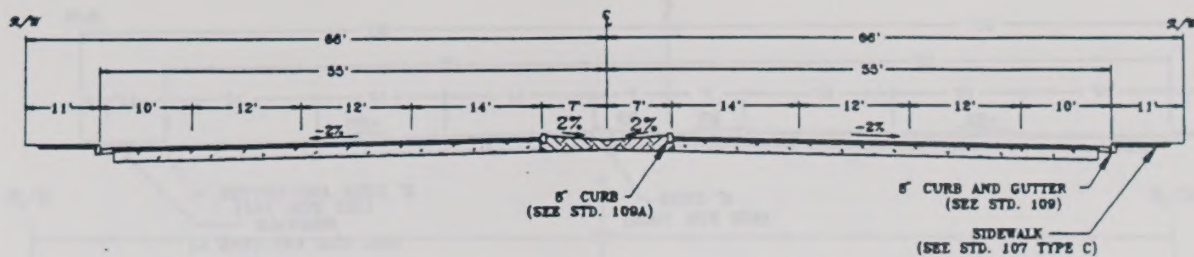
- Retention of the unique "switchbacks" on Carbon Canyon Road between Feldstar Drive and the Western Hills Country Club;
- Tonner Canyon Road as a long-range link to Diamond Bar or Brea and the SR-57 Freeway;
- Soquel Canyon Parkway as a long-range link to Brea; and
- Completion of the Chino Valley Freeway as a full freeway

In the future, the City's challenge will be to maintain development of the Circulation Plan in sequence with local and regional growth. Meeting this challenge will require attention to a number of issues, as described below.

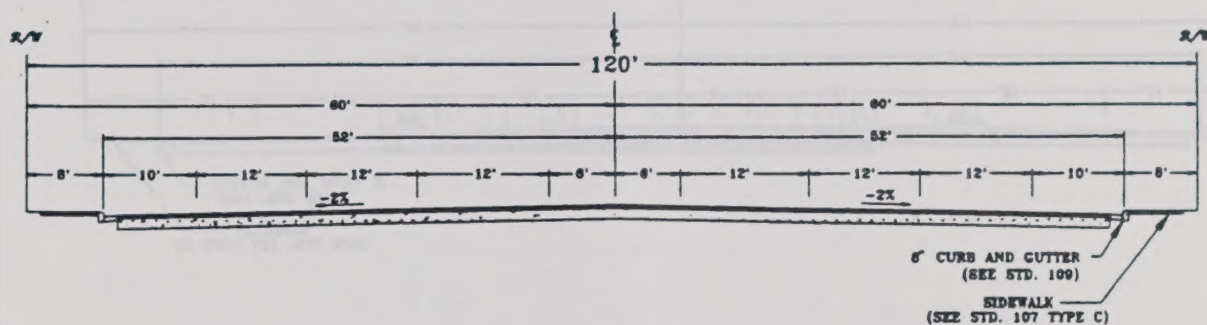
Regional and Local Roles in Providing Roadway Improvements

The City is located approximately at the center of a ring of major urban centers. Those centers include Los Angeles County to the west, San Bernardino County and Riverside County to the east, and the employment concentrations of Orange County to the south. Because of its location, Chino Hills experiences a large and rapidly growing number of through regional trips which pass entirely through the City without stopping. By the year 2013, more than half of all vehicle trips in the City will be through trips.

The upgrade of the Chino Valley Freeway to freeway standards will go a long way toward serving these regional through trips.



TYPICAL SECTION
WITH RAISED MEDIAN

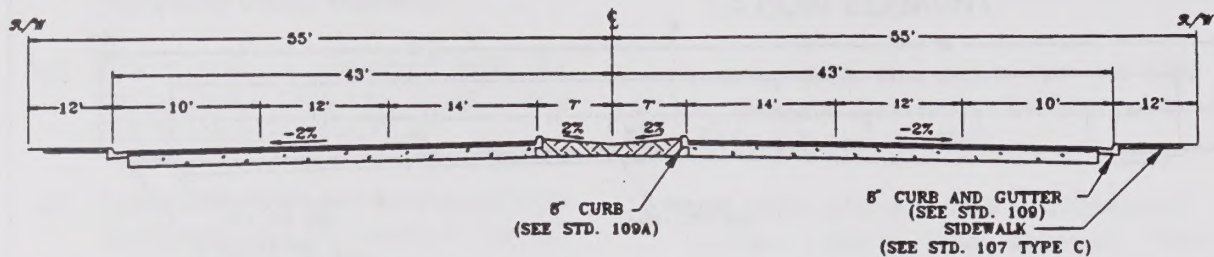


TYPICAL SECTION
WITH CONTINUOUS LEFT TURN LANE

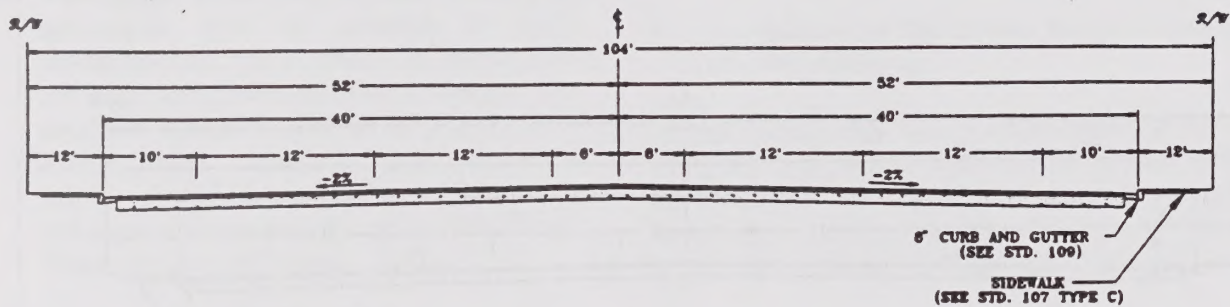
NOTES:

1. STRUCTURAL SECTION OF ROADWAY SHALL BE DETERMINED FROM SOILS TESTS AND SO INDICATED ON CONSTRUCTION PLANS. MINIMUM AC THICKNESS IS 0.45'
2. DRAINAGE FACILITIES SHALL BE PROVIDED TO DEWATER RAISED MEDIAN AREAS.
3. TEN FEET (10') SHOULDER AREAS MAY BE DESIGNATED AS A BIKE LANE AND EMERGENCY PARKING ONLY.
4. IRRIGATION SYSTEM IN MEDIAN AREA SHALL BE DRIP OR BUBBLE SYSTEM.
5. ALL CURB RETURNS AT MAJOR ARTERIALS, MAJOR HIGHWAYS, AND SECONDARY HIGHWAYS WILL HAVE A RADIUS = 50'.

Figure C-4
Cross Section Drawings:
Major Arterial



TYPICAL SECTION
WITH RAISED MEDIAN

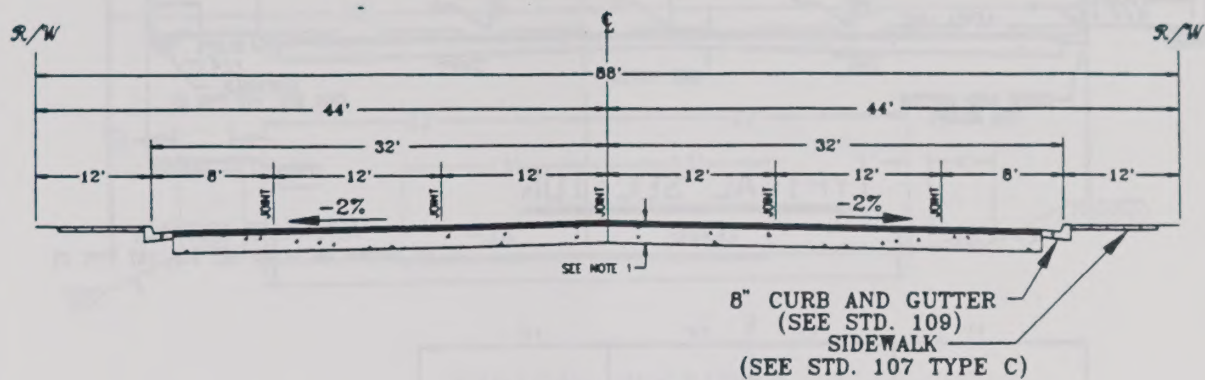


TYPICAL SECTION
WITH CONTINUOUS LEFT TURN LANE

NOTES:

1. STRUCTURAL SECTION OF ROADWAY SHALL BE DETERMINED FROM SOILS TESTS AND SO INDICATED ON CONSTRUCTION PLANS. MINIMUM AC THICKNESS IS 0.45'
2. DRAINAGE FACILITIES SHALL BE PROVIDED TO DEWATER RAISED MEDIAN AREAS.
3. TEN FEET (10') SHOULDER AREAS MAY BE DESIGNATED AS A BIKE LANE AND EMERGENCY PARKING ONLY.
4. IRRIGATION SYSTEM IN MEDIAN AREA SHALL BE DRIP OR BUBBLE SYSTEM.
5. ALL CURB RETURNS AT MAJOR ARTERIALS, MAJOR HIGHWAYS, AND SECONDARY HIGHWAYS WILL HAVE A RADIUS = 50'.

Figure C-5
Cross Section Drawings:
Major Highway

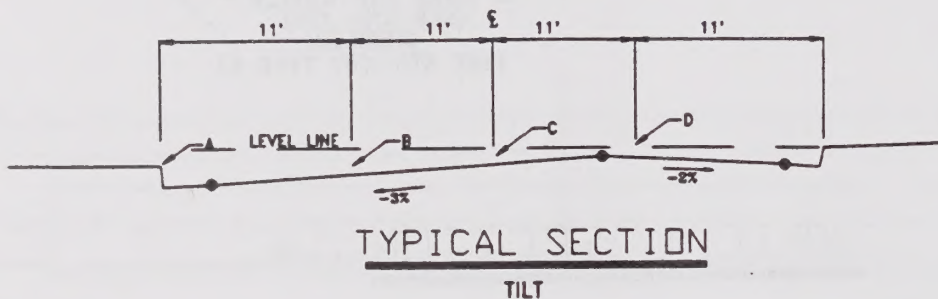
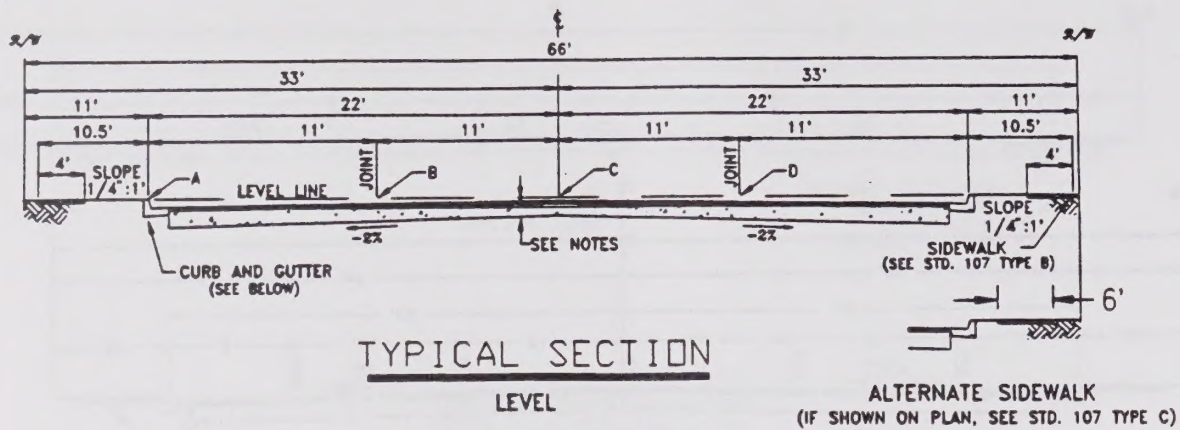


TYPICAL SECTION

NOTES:

1. STRUCTURAL SECTION OF ROADWAY SHALL BE DETERMINED FROM SOILS TESTS AND SO INDICATED ON CONSTRUCTION PLANS. MINIMUM AC THICKNESS 0.45'.
2. 8' SHOULDER AREAS MAY BE DESIGNATED AS BIKE LANES AND EMERGENCY PARKING ONLY.

Figure C-6
Cross Section Drawings:
Secondary Highway



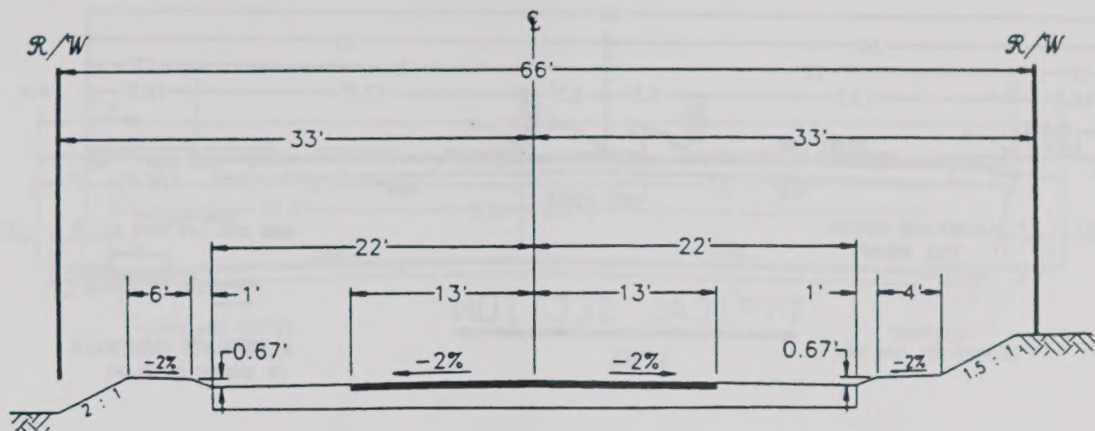
		A	B	C	D
8" CURB (SEE STD. 109)	LEVEL	0.00'	0.36'	0.14'	0.36'
	TILT	0.76'	1.02'	0.69'	0.36'
6" CURB (SEE STD. 109B)	LEVEL	0.00'	0.19'	(0.03')	0.19'
	TILT	0.76'	0.85'	0.52'	0.19'

() INDICATES ABOVE
LEVEL LINE

NOTES:

1. STRUCTURAL SECTION OF ROADWAY SHALL BE DETERMINED FROM SOIL TESTS AND SO INDICATED ON CONSTRUCTION PLANS.
2. MINIMUM DESIGN PAVING THICKNESS SHALL BE 0.25' ASPHALT CONCRETE.
3. CONSTRUCTION OUTSIDE R/W WILL REQUIRE SLOPE EASEMENTS.

Figure C-7
Cross Section Drawings:
Collector Street

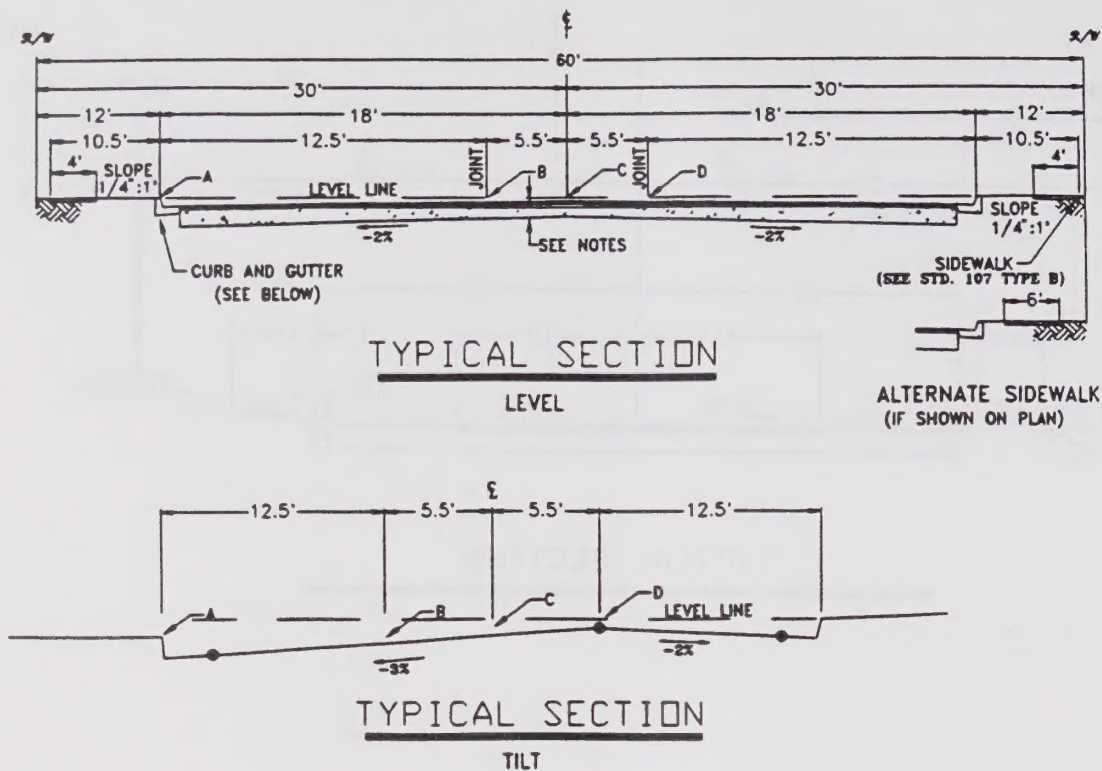


TYPICAL SECTION

NOTES:

1. INSTALL ASPHALT DIKES AT 22' FROM CENTERLINE WHEN NECESSARY TO HANDLE DRAINAGE.
2. MINIMUM AC THICKNESS IS 0.25'. UPON REQUEST BY THE CITY ENGINEER, A STRUCTURAL SECTION WILL NEED TO BE FIELD DETERMINED BY THE SOIL ENGINEER.

Figure C-8
Cross Section Drawings:
Rural Collector

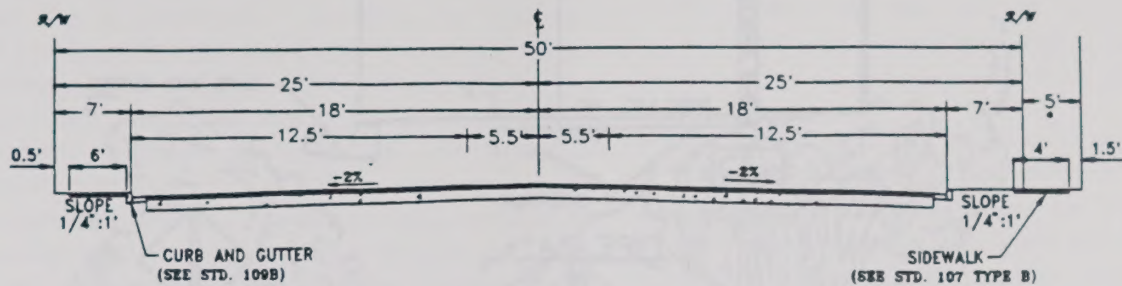


		A	B	C	D
8" CURB (SEE STD. 100)	LEVEL	0.00'	0.33'	0.22'	0.33'
	TILT	0.44'	0.66'	0.50'	0.33'
6" CURB (SEE STD. 100B)	LEVEL	0.00'	0.16'	0.05'	0.16'
	TILT	0.44'	0.49'	0.33'	0.16'

NOTES:

1. STRUCTURAL SECTION OF ROADWAY SHALL BE DETERMINED FROM SOIL TESTS AND SO INDICATED ON CONSTRUCTION PLANS.
2. MINIMUM DESIGN PAVING THICKNESS SHALL BE 0.25' ASPHALT CONCRETE.
3. CONSTRUCTION OUTSIDE R/W WILL REQUIRE SLOPE EASEMENTS.
4. WHEN PREPARING SUBGRADE FOR PAVING, CENTERLINE CROWN ON THE "LEVEL SECTION" SHALL BE RELOCATED EITHER LEFT OF RIGHT 0.50' TO MATCH CROWN BREAK IN PAVING MACHINE.

Figure C-9
Cross Section Drawings:
Local Street
(less than 1000 ADT)

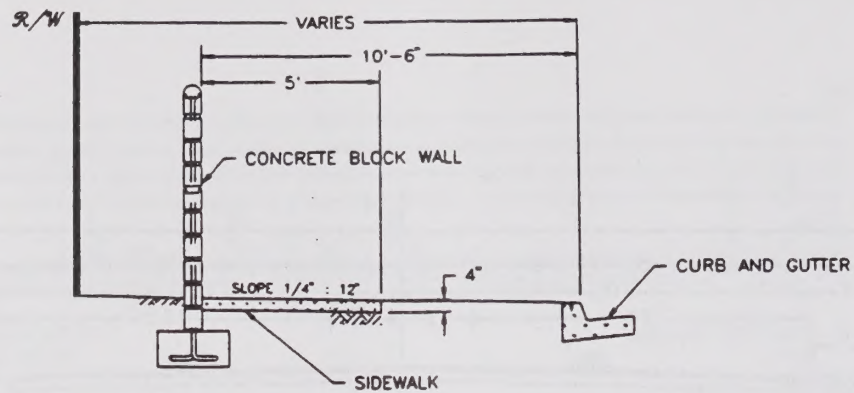


TYPICAL SECTION

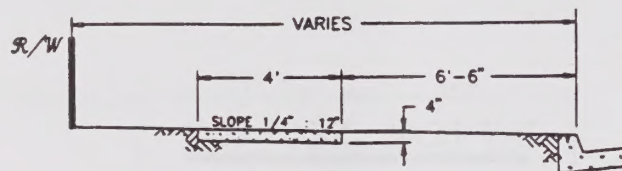
NOTES:

1. THIS TYPICAL SECTION SHALL BE USED ONLY ON LOCAL STREET SUCH AS CUL-DE-SACS, LOOPS AND STREETS THAT DO NOT CARRY THROUGH TYPE TRAFFIC. THE USE SHALL BE LIMITED TO STREETS WHICH ARE PROJECTED TO CARRY LESS THAN 1000 ADT UPON ULTIMATE DEVELOPEMENT OF THE AREA.
2. STRUCTURAL SECTION OF ROADWAY SHALL BE DETERMINED FROM SOIL TESTS AND SO INDICATED ON CONSTRUCTION PLANS. MINIMUM AC THICKNESS SHALL BE 0.25'.
3. CONSTRUCTION OUTSIDE R/W LINE SHALL REQUIRE SLOPE EASEMENTS.
- *4. 5' WIDE SIDEWALK AND PUBLIC UTILITIES EASEMENT AT THE OPTION OF THE OWNER, THIS AREA MAY BE DEDICATED AS ROAD RIGHT-OF-WAY.

Figure C-10
Cross Section Drawings:
Restricted Local Street



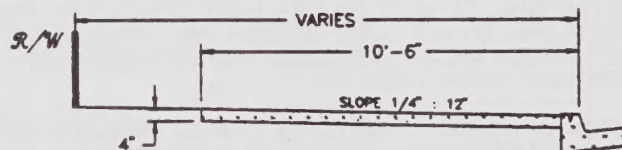
TYPE "A"



TYPE "B"



TYPE "C"



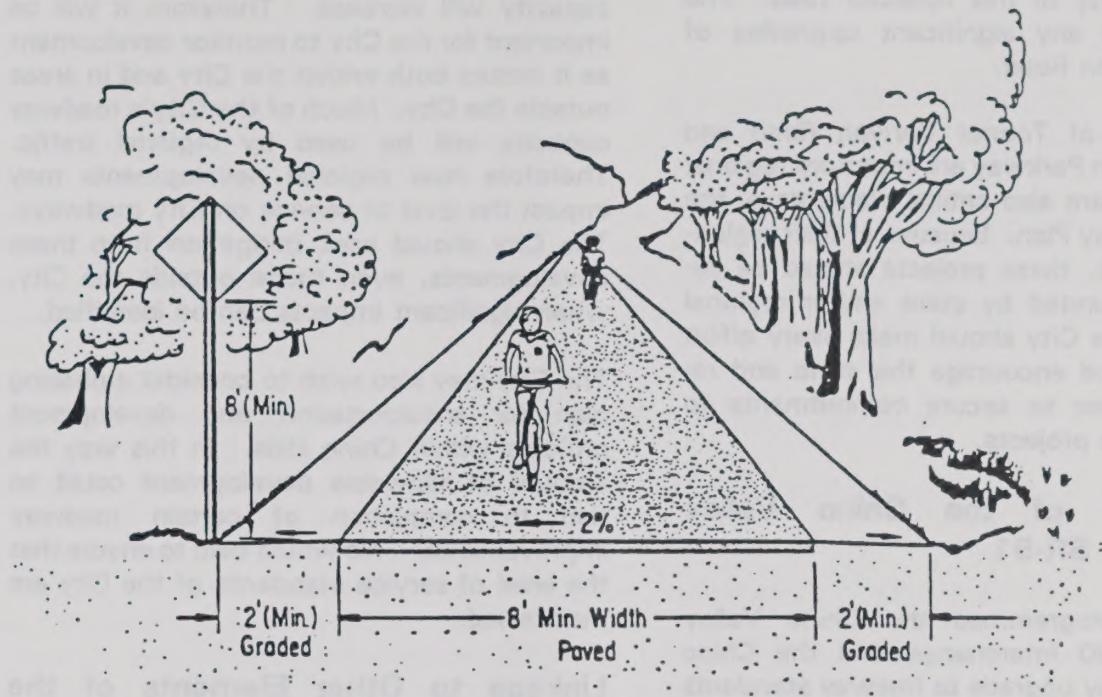
TYPE "D"

NOTES:

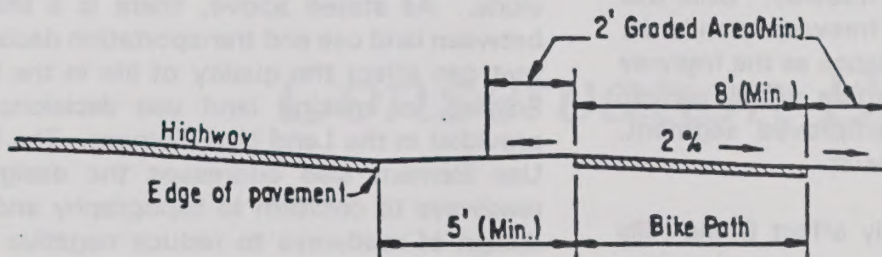
1. TYPE "C" SIDEWALKS ADJACENT TO CURB SHALL ONLY BE USED ON LOCAL AND COLLECTOR STREETS AND ONLY UPON APPROVAL OF THE TRANSPORTATION DEPARTMENT.
2. SIDEWALK SHALL BE CONSTRUCTED OF 520-C-2500 CONCRETE.
3. WEAKENED PLANE JOINTS SHALL BE CONSTRUCTED ON 10 FEET SPACING.
4. SCORING SIDEWALK WILL BE PERMITTED.
5. IN EXPANSIVE SOIL AREAS, REFER TO SECTION 201 OF THE CITY SPECIFICATIONS.

Figure C-11
Cross Section Drawings:
Sidewalks

TWO-WAY BIKE PATH ON SEPARATED RIGHT-OF-WAY



TYPICAL CROSS SECTION BIKE PATH ALONG HIGHWAY



Two-Way: 8' Minimum Width

SOURCE: Barton Aschman Associates, Inc., November 1993

Figure C-12
Cross Section Drawings:
Bike Path

However, there will also be a substantial demand for Tonner Canyon Road and Soquel Canyon Parkway. Without those new roadways, regional demand on Carbon Canyon Road (State Route 142) will overwhelm the limited capacity of this collector road. The City opposes any significant upgrading of Carbon Canyon Road.

Construction of Tonner Canyon Road and Soquel Canyon Parkway are important regional projects that are also critical elements of the City's Roadway Plan. Because of their regional significance, these projects should be designed and funded by state and/or regional agencies. The City should make every effort to support and encourage the state and regional agencies to secure commitments to develop these projects.

Completion of the Chino Valley Freeway to SR-91

While the programmed the Chino Valley Freeway/SR-60 interchange and the Chino Valley Freeway upgrade to freeway standards is a critical improvement and welcomed by the City, it also leaves a significant unimproved "gap". This is the segment of the Chino Valley Freeway between the southern City boundary and the SR-91 freeway. Until this gap is upgraded to full freeway standards, with the same number of lanes as the freeway will have in Chino Hills, there will be severe congestion along the unimproved segment, and lengthy delays will result.

These delays will seriously affect Chino Hills trips, as well as a very large number of regional trips. As a result, the freeway through Chino Hills will be under-utilized. Therefore the benefits of this significant public investment will be constrained. The City should make every effort to support and encourage the state and regional agencies to secure commitments to design and fund the completion of the Chino Valley Freeway all the way to SR-91.

Linkage Between Land Use and Transportation Decisions

As local and regional growth continues to occur, the need for additional transportation capacity will increase. Therefore it will be important for the City to monitor development as it occurs both within the City and in areas outside the City. Much of the City's roadway capacity will be used by regional traffic. Therefore new regional developments may impact the level of service on City roadways. The City should seek mitigation from these developments, even those outside the City, when significant impacts can be identified.

The City may also wish to consider a phasing plan for transportation and development projects within Chino Hills. In this way the amount of allowable development could be tied to completion of certain roadway improvements. This would help to ensure that the level of service standards of the City are maintained.

Linkage to Other Elements of the General Plan

The Circulation Element provides policy guidance for making transportation related decisions. As stated above, there is a linkage between land use and transportation decisions that can affect the quality of life in the City. Policies for making land use decisions are provided in the Land Use Element. The Land Use Element also addresses the design of roadways to conform to topography and the design of roadways to reduce negative aesthetic impacts.

An important part of the circulation system is the system of linking and equestrian trails. This system is being defined in the context of recreational activities and open space throughout the City. Therefore the definition of the trails system can be found in the Open Space, Parks and Recreation Element. Safety issues related to roadway design, fire hazards, and emergency access, are addressed in the Safety Element.

Chapter 4 Conservation Element

A. INTRODUCTION

Conservation means a sense of respect and stewardship, a discipline, a feeling of responsibility, and a commitment. As the City plans for new growth, the need for protection and preservation of natural resources becomes more apparent. The Conservation Element explains how the City will protect and enhance its natural resources, set standards and provide a program.

California planning law requires that every General Plan include a Conservation Element (Government Code Section 65020). The purpose of this element is to provide for the protection and proper use of natural resources. In California, "natural resources" include scenic views, trees, wildlife, biological resources, geology, agricultural land, and historic resources. Other laws that protect resources, such as those in the California Conservation Element, are designed to protect and enhance natural resources, such as water resources and natural resources, such as biological resources and natural resources.

The Conservation Element is a key element of the City's General Plan and is designed to protect and enhance the City's natural resources. The City's General Plan and the Conservation Element address the management of natural resources, including water, land, and air, and the protection of public health and safety. The City's General Plan and the Conservation Element are designed to protect and enhance the City's natural resources.

Purpose of the Element

San Juan Capistrano's continued and improved growth is a priority. The City's General Plan and the Conservation Element are designed to protect and enhance the City's natural resources. The City's General Plan and the Conservation Element are designed to protect and enhance the City's natural resources.

use the City's natural resources and provide for the future.

B. CONSERVATION, PUBLIC SERVICES AND FACILITIES ISSUES

The Conservation Element describes the City's policies and programs for the protection and enhancement of natural resources. The City's General Plan and the Conservation Element are designed to protect and enhance the City's natural resources.

The Natural Setting

- Provide for the protection and enhancement of natural resources.
- Provide for the protection and enhancement of natural resources.
- Provide for the protection and enhancement of natural resources.

Biological Resources

- Provide for the protection and enhancement of natural resources.
- Provide for the protection and enhancement of natural resources.
- Provide for the protection and enhancement of natural resources.

Water Conservation

- Provide for the protection and enhancement of natural resources.
- Provide for the protection and enhancement of natural resources.
- Provide for the protection and enhancement of natural resources.

Air Quality

- Provide for the protection and enhancement of natural resources.
- Provide for the protection and enhancement of natural resources.
- Provide for the protection and enhancement of natural resources.

Conservation Element

Chapter 4 Conservation Element

A. INTRODUCTION

Chino Hills retains a sense of openness and natural beauty, a character becoming increasingly rare in Southern California. As the City plans for new growth, the long-range preservation and conservation of natural resources becomes vital. The Conservation Element explains how the City will protect and manage its natural resources citywide and for individual projects.

California planning law requires that every General Plan include a Conservation Element [Government Code Section 65302(d)]. The conservation element focuses on the preservation and careful use of natural resources. In Chino Hills, "natural resources" include scenic vistas, trees, hillsides, biological resources, air quality, agricultural land, and mineral resources. Closely linked to natural resources, and also included in the Chino Hills Conservation Element, are discussions on water conservation, solid waste reduction and recycling, and cultural resources (fossils, archaeological remains, and historical artifacts and buildings).

The Conservation Element is closely related to the Open Space and Recreation Element, which focuses on the City's Parks, Recreation, and Open Space Master Plan. The Open Space and Recreation Element addresses the management of open spaces, including areas left undeveloped for public health and safety reasons, and areas designated for active and passive recreation.

Purpose of the Element

Southern California continues, and is expected to continue, to develop. The value of nature and of the conservation of natural resources -- to provide visual relief from urban congestion, to protect wildlife, and to conserve resources for future generations -- is more important than ever. The purpose of the Conservation Element is protect, conserve, and wisely man-

age the city's natural resources and improve local air quality.

B. CONSERVATION, PUBLIC SERVICES AND FACILITIES ISSUES

The Conservation Element discusses issues familiar to the residents of Chino Hills. The following outline summarizes those issues, which are detailed in upcoming sections of the Element.

The Natural Setting

- Creation of open space and wildlife corridors
- Preservation of canyon areas
- Emphasis on integrating existing oak, eucalyptus, and other tree groupings into new development

Biological Resources

- Preservation of existing plant and animal habitats
- Additional biological analysis as required during development review

Water Conservation

- Citywide reduction in domestic water use, and an increase in the proportion of reclaimed water use
- Use of reclaimed water where economically feasible and not precluded by public health considerations

Air Quality

- Reduced air pollution through coordinated land use, transportation, and energy planning

- Compliance with the Air Quality Management Plan (AQMP) and South Coast Air Quality Management Districts' Air Quality Handbook

Energy Conservation

- Innovative site planning and building designs to minimize energy consumption
- Energy saving features beyond State-mandated minimum requirements

Solid Waste Management

- Implementation of the City's Source Reduction and Recycling Element and Household Hazardous Waste Element

Mineral Resources

- Continuation of existing oil production in accordance with General Plan policy

Agricultural Land

- Protection of commercially viable agricultural land
- Promotion of equestrian uses
- Continuation of cattle grazing on City-owned private lands.

Cultural Resources

- Citywide paleontological, archaeological, and historical records search

Public Services and Facilities

- Assisting the Chino Unified School District in providing adequate school sites and facilities
- Assist utility purveyors in providing adequate service.

C. GOALS, OBJECTIVES, AND POLICIES

This section incorporates conservation issues into concise statements -- goals, objectives, and policies -- which will direct the City's actions. Each general "goal" is put into action by more detailed "policies." Each "objective" gives the timeline and, where appropriate, quantifiable standards applied to the goal.

The overall direction for the Conservation Element is summarized by the following "major" and "focused" goals introduced in the Land Use Element. The objectives that follow the goals are categorized according to the conservation issues: the natural setting, biological resources, water conservation, air quality, energy conservation, solid waste management, mineral resources, agricultural land, and cultural resources.

Major Goal 1

Preserve Rural Character

Focused Goal 1-1

Retention of important ridgelines and open space areas

Focused Goal 1-2

**Preservation of important viewsheds
(See Land Use Element)**

Focused Goal 1-3

Establishment of Land Use Densities appropriate to their location in the city
(See Land Use Element)

Major Goal 4

Protection of Natural Environment in Chino Hills

Focused Goal 4-1

Development which relates to environmental constraints

Focused Goal 4-2

Open space lands which maintain environmental integrity and function as self-supporting, natural ecosystems
(Also see Open Space and Recreation Element)

The Natural Setting

The Chino Hills landscape is comprised of a system of canyons, streams, floodplains, ridges, and hillsides. The streams, watercourses, and pools which run through the hills usually lie at the bottom of canyons and drainage ravines, and carry intermittent water to the Prado Flood Control Basin of the Santa Ana River. The naturally connected open space network defines the rural and scenic character of Chino Hills. Near and distant views throughout the community reinforce the scenic quality of the city's natural setting. The residents of Chino Hills are determined to preserve this character and to integrate care-

fully planned new development into the natural landscape.

Objective 1-1

Create open space and wildlife corridors, and preserve natural features, as defined and illustrated in the Specific Plan, Development Code, and Parks, Recreation, and Open Space Master Plan. The development review process will ensure that individual project proposals do not interfere with the goal. (Also see Land Use Element.)

Policy 1-1

Preserve and protect rural and natural scenic qualities by creating open space and wildlife corridors, and by integrating existing natural features into new development.

Policy 1-2

Preserve as much open space as possible along canyon roadways such as Carbon Canyon, Soquel Canyon, and the canyons adjacent to Chino Hills State Park.

Policy 1-3

In order to accommodate natural periodic flooding, wildlife habitat, and native riparian plants, keep canyon floors as close as possible to their natural condition.

Policy 1-4

In canyon areas committed to development, emphasize the retention of natural topographic features, and require low visual profiles and dense vegetation for buildings.

Policy 1-5

Emphasize major canyons and grassland valleys by preserving major linear open spaces in these areas with floodplain zones as the visual focus. Plant pockets of appropriate vegetation to protect the watershed areas and grasslands.

Policy 1-6

In areas of steep and rugged topography, emphasize existing tree groupings, especially oaks, by planting additional tree groupings in areas of new development. Use additional tree plantings to blend new development and manufactured slopes with the natural setting, especially in highly visible locations such as prominent ridgelines. Encourage natural contour grading.

Biological Resources

Chino Hills is home to a wide diversity of plant and animal species, often located in the canyons. Plant communities include riparian woodlands and thickets, freshwater marshes, oak woodland, walnut woodland, chaparral, and coastal sage scrub. The city provides habitat for several endangered, threatened, or candidate animal species, including birds and wildlife. Chino Hills also includes valuable ecotones, which are areas of overlapping plant communities providing diverse habitat. The City's goal of preserving its rural character cannot be accomplished without the commitment to preserving biological resources.

Objective 2-1

Restrict new development to areas which do not contain sensitive, rare or endangered species, oak woodlands, chaparral, and riparian habitats.

Policy 2-1

Ensure that the development review process is sensitive to the preservation of significant ecological areas, riparian habitats, wildlife corridors, and "ecotones" (areas characterized by overlapping vegetation communities such as where a woodland meets grassland) on a project-specific and cumulative basis.

Policy 2-2

Preserve eucalyptus windrows, oak woodlands, riparian areas, freshwater marshes, and

open water bodies as identified on the Biotic Communities Map in the Chino Hills Specific Plan Environmental Impact Report or as may be modified by future site-specific environmental studies.

Policy 2-3

For residential projects that fall within areas of ecological significance (as identified in the General Plan Environmental Impact Report), continue to require additional biological analysis during the development review process.

Policy 2-4

Trees which in the opinion of the City function as an important part of the City's or a neighborhood's aesthetic character may not be removed without specific permission from the City, regardless of their location.

Water Usage and Conservation

Most of Southern California's water is imported from areas north of the region. The ultimate water supply for the city of Chino Hills will consist of groundwater supplemented by treated State Project water. The State of California Department of Water Resources has set a minimum goal of 15 percent reduction in water use in order to reduce Southern California's demand for imported water. The City of Chino Hills has established a goal of 20 percent water conservation.

Objective 3-1

Implement a water conservation program to achieve a water conservation savings of 20 percent of total potable water use by the year 2013, based on existing water demand and the projected demand of future development. New projects will be analyzed during design review, based on Specific Plan and Development Code standards.

Policy 3-1

Use reclaimed water for non-potable water supplies (e.g., landscaping) wherever economically feasible and not precluded by public health considerations. Reclaimed water shall meet the Regional Quality Control Board requirements and the latest requirements of the Wastewater Reclamation Criteria (Title 22, Division 4) of the State Department of Health Services.

Policy 3-2

Evaluate the water conservation potential of individual projects according to the landscape policies included in the Land Use Element.

Air Quality

Air pollution is a major regional problem in Southern California. The City of Chino Hills will continue to support and implement regional efforts to reduce air pollution, such as those under the jurisdiction of the South Coast Air Quality Management District (SCAQMD) and the Southern California Association of Governments (SCAG). Most air pollution in the region results from vehicle traffic, and traffic is related directly to land use patterns. The objectives and policies in the Circulation and Land Use elements, in coordination with those listed below, will help reduce air pollution in the region.

Objective 4-1

Work toward meeting air pollution reduction goals established by the South Coast Air Quality Management District (SCAQMD) and the Southern California Association of Governments (SCAG). These goals are identified, and programs described, in the Air Quality Management Plan (AQMP), as amended. Evaluate individual projects according to criteria in the AQMP and the SCAQMD California Environmental Quality Act (CEQA) Air Quality Handbook. (Also see Circulation Element.)

Policy 4-1

Reduce air pollution through coordinated land use, transportation, and energy use planning.

Policy 4-2

Endorse regional and local air quality and transportation management plans in order to reduce air pollution emissions and vehicle trips.

Policy 4-3 *Locate multi-family development close to commercial areas to encourage pedestrian rather than vehicle traffic.*

Policy 4-4

Develop a balance of land uses within the city to promote a reduction of distance between residence and workplace.

Policy 4-5

Develop neighborhood parks close to concentrations of homes to encourage residents to walk to public recreation.

Policy 4-6

Provide commercial areas that are conducive to pedestrian and bicycle circulation.

Policy 4-7

Develop a coordinated system of pedestrian pathways.

Policy 4-8

Encourage bike paths and lanes to reduce vehicle travel and air pollution. Coordinate these efforts with property owners and responsible jurisdictions. Design bike paths and lanes according to national standards and uniform practices.

Policy 4-9

Encourage the use of energy conservation devices in project design and construction to increase energy efficiency and decrease pollution from distant electrical power plants and on-site natural gas use.

Policy 4-10

Reduce vehicle trips through incentives, regulations, and/or transportation demand management (TDM) programs. (See Circulation Element.)

Policy 4-11

Reduce total vehicle miles traveled (VMT) through incentives, regulations, and/or transportation demand management (TDM) programs. (See Circulation Element.)

Policy 4-12

Promote modified work schedules which reduce peak-period auto travel.

Policy 4-13

Participate in efforts to achieve increased designation, construction, and operation of high-occupancy vehicle (HOV) lanes on local freeways.

Policy 4-14

Promote all forms of transit serving the city and the urbanized portions of San Bernardino, Riverside, Los Angeles and Orange counties, including light rail and commuter rail service.

Policy 4-15

As required by the South Coast Air Quality Management District, encourage employer rideshare and transit incentive programs by local businesses.

Policy 4-16

Encourage businesses to alter truck delivery routes and local delivery schedules to off-peak hours.

Policy 4-17

Implement citywide traffic flow improvements outlined in the Circulation Element.

Policy 4-18

Support to the extent possible State and federal legislation which would improve vehicle/transportation technology and cleaner fuels.

Policy 4-19

Implement land use policy contained in the Land Use Element toward achieving jobs/housing balance goals.

Policy 4-20

Integrate air quality planning with the land use and transportation process by encouraging the use of alternative transportation modes and by promoting jobs/housing balance, both of which will reduce vehicle trips.

Energy Conservation

As with many communities in Southern California, Chino Hills is facing increased energy impacts. New development cannot be accommodated unless electricity and natural gas are available at a reasonable cost and with minimal environmental impact. The issue of electric and magnetic fields (EMF) around transmission lines, and their health effect on humans, has become a concern across the country; the City will maintain up-to-date information on the issue.

Objective 5-1

Evaluate the energy conservation potential of individual projects during the development review process. Monitor citywide energy use and trends.

Policy 5-1

Conserve energy resources through use of available technology and conservation practices.

Policy 5-2

Encourage innovative site planning and building designs which minimize energy consumption by taking advantage of sun and shade patterns, prevailing winds, landscaping, and building materials.

Policy 5-3

Encourage new development and existing structures to install energy saving features beyond those required under State Title 24 energy regulations.

Policy 5-4

Make available to the public information concerning electric and magnetic fields (EMF), and as continuing research supports, amend City codes to address any risks associated with EMF.

Solid Waste Management

Landfills are rapidly reaching capacity, and new landfills are becoming increasingly difficult to establish due to public resistance and the lack of available land. To decrease the rate at which landfills are filled, local jurisdictions are required by State law to reduce waste within their boundaries through source reduction, recycling, and composting. To comply with the California Integrated Waste Management Act, the City of Chino Hills adopted a Source Reduction and Recycling Element (not a General Plan Element) in February 1993.

Objective 6-1

Meet State requirements for solid waste reduction by diverting 25 percent of the City's solid waste stream from landfills by the year 1995 and 50 percent by 2000.

Policy 6-1

Implement the City's Source Reduction and Recycling Element as required by the California Integrated Waste Management Act. Annually review the element's effectiveness.

Policy 6-2

Publicize and educate the public about waste reduction techniques and facilities.

Policy 6-3

Require new developments to incorporate recycling locations into their sites.

Policy 6-4

Annually review waste collection performance to verify quality of service.

Mineral Resources

The Chino Hills area has produced oil since the late 1800s, and minor oil production continues in the Chino-Soquel Oil Field and the Mahala Oil Field, as discussed in the Safety Element.

A brick making yard operates near State Route 71 and Pomona Rincon Road; however, clay for the brick is no longer available on site.

No significant mineral deposits are known to exist in Chino Hills, according to the California Division of Mines and Geology. However, immediately outside the city limits in the extreme southeast corner, Mines and Geology has classified sand and gravel resources along the Santa Ana River wash as "MRZ-2," defined as "areas where adequate information indicates that significant mineral deposits are present...or where it is judged that a high likelihood for their presence exists." Much of this area is within Chino Hills State Park.

Objective 7-1

Allow existing oil production activities to continue operations in Chino Hills.

Policy 7-1

Allow existing oil production and brick making in accordance with General Plan land use policy.

Policy 7-2

Monitor the potential effects of existing oil production and brick making on new development proposals through the development review process.

Agricultural Land

In the past, agriculture was a significant land use in Chino Hills. Uses have ranged from very intensive dairies and cattle feed lots on flatter land, to row crops and horse raising, to less intensive "dry farming" and cattle grazing on the rolling hills. Today, the most intensive uses are gone. Existing agriculture typically

consists of orchards, cultivated cropland, abandoned or fallow fields, pastureland, and accompanying residences. Most of the large ranches, while still being dry farmed and grazed, are no longer owned by farming interests and are expected to be developed over the next several years.

Agricultural areas which are expected to remain include ranches south of Butterfield Ranch and various locations for horse raising (concentrated along English Road west of Peyton Drive).

Objective 8-1

Retain agricultural uses to the extent feasible.

Policy 8-1

Require agricultural uses, or uses compatible with agriculture (including single family homes) in areas designated for agriculture/Ranches or Rural Residential.

Policy 8-2

Continue to permit horse raising on residential lots of over 20,000 square feet.

Policy 8-3

Phase projects so that existing agricultural activities can remain viable while development occurs elsewhere within the project area.

Policy 8-4

Implement the equestrian trails plan in the Parks, Recreation, and Open Space Master Plan.

Policy 8-5

Work closely with developers through the development review process to design and provide additional equestrian trails and facilities within their respective projects.

Cultural Resources

The city contains numerous recorded paleontological (fossil) and archaeological sites, and several historic structures. However, a citywide survey of prehistoric and historic resources has not been undertaken. As recently as June 1993, significant paleontological resources, including fossilized remains of a Mammoth or giant ground sloth, were discovered during grading of a construction site. Many of the city's archaeological sites are associated with the area's rich Native American history. Historic buildings in the city include the Isaac Williams Adobe (California Historical Landmark), the Homestead (California Point of Historical Interest), and the Yorba-Slaughter Adobe (National Register and California Historical Landmark). The high potential for finding fossils and archaeological remains demands continual monitoring of new development sites.

Objective 9-1

Within three years of the adoption of the General Plan, conduct a citywide paleontological and archaeological records search and an architectural/ historical field survey. For all new projects, apply Supplementary Document J (Archaeological Impacts) of the California Environmental Quality Act (CEQA) Guidelines.

Policy 9-1

Preserve existing, and continue to research potential, cultural resources in the city.

Policy 9-2

For development proposed in areas identified in the records search and field survey, require a cultural resource investigation (including mitigation) by a qualified professional.

Policy 9-3

Require implementation of CEQA Guidelines Supplementary Document J (Archaeological Impacts) in the event that cultural resources are discovered during excavation for a project.

Public Facilities and Services

Residents of Chino Hills expect a high level of public services and facilities. Adequate school facilities providing quality education are important to the community. Schools are not a function of City government but are separately funded and administered by the Chino Unified School District. Nonetheless, the City can work cooperatively with the school district to assist it in providing adequate sites and facilities as development in Chino Hills continues.

Police and fire services are also important to the residents, and the maintenance of a high level of service is required. Water and sewer facilities are being expanded as the City develops, and must be maintained and expanded for the future.

Objective 10-1

Develop the public services and infrastructure systems to anticipate the absorption projected for the City: 3,100 housing units and 16 acres of office space between 1993 and 1998; 1,600 housing units between 1998 and 2003; 1,200 units between 2003 and 2008; 900 units between 2008 and 2013; and 125-140 acres of retail space and 198 acres of business park development over the 20-year timeframe of the General Plan.

Policy 10-1

Phase development, public facilities, except schools, and infrastructure in conjunction with public entities to ensure that adequate facilities and infrastructure are available before occupancy.

Policy 10-2

Require new development to contribute its share of the cost of providing necessary public services and infrastructure through equitable fees and exactions.

Policy 10-3

Locate water transmission and primary distribution mains in road rights-of-way, where possible.

Policy 10-4

Develop the necessary water storage, pumping capacity, and pipeline pressure needed to meet emergency requirements (e.g., disruption of water service due to an earthquake, or water required for fire fighting), as defined by the Chino Valley Independent Fire District.

Policy 10-5

Permit septic tank sewage systems for areas which are at least one mile from existing sewage lines and if the lot size is at least five (5) acres.

Policy 10-6

At the earliest possible stage of development, coordinate the planning and siting of school facilities, recreational facilities, child care centers, libraries and other related public facilities so that they are adequate to serve the projected future residents of the area.

Policy 10-7

Notify school districts of proposed subdivision projects or development applications early in the review process to allow time for adequate responses by school districts.

Policy 10-8

Request that school districts indicate the level of facilities currently available and planned for the future to serve development projects requiring discretionary review.

D. THE CONSERVATION PLAN

The Conservation Plan is related directly to the goals, objectives, and policies defined in the previous section. This plan must remain consistent with the Land Use Plan described in the Land Use Element.

Conservation of water, energy, and air resources is important at all levels (individual, citywide, regional...) because these resources are not confined by geographic boundaries; they are shared by all. Preservation and protection by individual communities can collectively benefit an entire region. Regional plans and policies (often for implementation at the local level) offer means for achieving far-reaching conservation goals. The City of Chino Hills will continue to cooperate with State and regional agencies in efforts to improve the environment and replenish vital natural resources.

The Natural Setting

Open space and wildlife corridors provide access to passive and active open space, as well as scenic views that help define the rural character of Chino Hills. Both animals and people use these corridors (through the city's canyons, watercourses, and valleys). The City must preserve and protect these corridors within Chino Hills while working with surrounding jurisdictions to create a coordinated regional system. For example, the land adjacent to Chino Hills State Park should provide a natural physical and visual transition into the park.

New development must be sensitive to natural corridors and the existing natural setting of Chino Hills. Natural topographic features, hillsides, groups of trees, and ridgelines must be preserved and protected. If this is done, the overall vision of Chino Hills as a rural community will remain intact.

The Chino Hills Land Use Element describes appropriate land use classifications (Public Open Space, State Park, Commercial Recreation) that will help ensure that open space is preserved and protected. For those areas

where most development has occurred and is expected to occur, the Chino Hills Specific Plan guides development. The Specific Plan details requirements for preserving open space and natural features. The City's Development Code contains similar requirements. The City's Parks, Recreation, and Open Space Master Plan also addresses those issues. Collectively, these tools will help preserve and protect the natural setting of Chino Hills.

Biological Resources

Chino Hills' biological resources include: plant communities such as riparian woodlands, freshwater marshes, oak woodland, walnut woodland, and coastal sage scrub; endangered, threatened, and candidate animal species; and ecotones (areas of overlapping plant communities). The preservation of biological resources must be pursued through the careful implementation of Specific Plan and Development Code standards.

Conservation Element policies 2-1 through 2-3 apply directly to preserving existing plant and animal habitats. The Specific Plan sections listed above (The Natural Setting) seek to protect native plant communities, riparian vegetation, existing trees, and open water bodies. Implementation of the Parks, Recreation, and Open Space Master Plan also will help preserve the city's biological resources. The Specific Plan Biotic Communities and Ecological Sensitivity maps identify areas to be protected. However, the maps do not replace site-specific analysis as part of project environmental review.

Water Conservation

The State of California Department of Water Resources has set a minimum goal of 15 percent reduction in water use. The mandatory implementation of the California Administrative Code (Titles 20 and 24), the Health and Safety Code (Sections 17921.3 and 40470), and the Government Code (Section 7800) will help achieve this goal. The City of Chino Hills has established a water conservation goal of 20 percent. The Specific Plan, Division 10, Chapter 2 (Water Resource Conservation)

requires the use of water-saving devices, including:

- Low-flow shower heads and faucets;
- Low-flow toilets;
- Cycle adjustment dishwashers;
- Flow-reducing valves to limit household water pressure to a maximum of 60 pounds per square inch;
- Hot water pipe insulation or instantaneous water heaters;
- Automatic sprinkler systems with timers; and
- Standard-sized water meters and house connection pipes (not oversized).

Conservation Policy 3-1, consistent with Specific Plan Division 10, Chapter 2, requires the use of reclaimed water wherever economically feasible and not precluded by public health concerns. The greatest potential for reclaimed water use for irrigation in the city exists at the golf courses: Western Hills Golf Course in Carbon Canyon and Los Serranos Golf Course. Western Hills Golf Course currently uses reclaimed water from the privately owned treatment plant serving the adjacent mobile home park. Reclaimed water use will be investigated for landscaped areas of schools, commercial and business park sites, parks, parkways, and multi-family developments.

Energy Conservation

Under State law, the City must require new development to implement energy saving site planning and building designs. New development will include energy saving features beyond those required under State Title 24, and existing development should be retrofitted to meet State requirements. Also, the City will maintain up-to-date information regarding electric and magnetic fields (EMF).

Solid Waste Management

In February 1993, the City of Chino Hills adopted a Source Reduction and Recycling Element (SRRE) to meet the requirements of the California Integrated Waste Management Act. The Element explains programs intended to reduce solid waste through source reduction, recycling, and composting. As part of the effort, the City will expand its curbside recycling pilot program to include all of Chino Hills. The SRRE also contains a Special Waste Component to address non-hazardous wastes that require special handling (e.g., ash, sewage sludge, auto bodies) and a Household Hazardous Waste Element. The SRRE is being implemented to achieve the following objectives:

- Divert at least 25 percent of the city's solid waste by the year 1995; at least 50 percent by the year 2000.
- Reduce waste generation up to 1 percent by the year 1995; by 1 to 2 percent by the year 2000.
- Recycle 18 to 22 percent of the city's waste stream by the year 1995; 38 to 42 percent by the year 2000.
- Compost between 6 and 9 percent of the city's waste stream by the year 1995; 8 to 10 percent by the year 2000.

Mineral Resources

The City will allow existing oil production and brick making in accordance with General Plan policy, which includes monitoring potential effects of these operations on new development. No other mineral extraction is foreseen under the Conservation Element.

Agricultural Land

Land use policy permits agriculture, cattle grazing, and equestrian uses in the AR: Agriculture/Ranches land use classification. Agricultural areas expected to remain in operation

include ranches south of Butterfield Ranch, and various locations for horse raising (concentrated along English Road west of Peyton Drive). Conservation Element policies encourage retaining these uses. However, policies also recognize that new development will occur near existing agriculture, grazing, and equestrian uses; any new neighboring uses must remain compatible.

Cultural Resources

The City is committed to preserving recorded cultural resources (paleontological, archaeological, and historical) and to searching out potential resources. Within three years of General Plan adoption, the City will conduct a citywide cultural resources records search (paleontology and archaeology) and field survey (architecture and history). Mitigation of potential project impacts on resources will include site-specific investigations and implementation of CEQA Guidelines Supplementary Document J (Archaeological Impacts).

Chapter 5: Safety Element

A. INTRODUCTION

The geological environment of Southern California and the Chino Hills area, in particular, present a number of natural hazards that could endanger the public's safety. Numerous earthquake faults traverse Southern California, making ground shaking and other earthquake hazards credible events. The city also contains a number of hillsides in excess of 25% slope. The steep topography, combined with area soil conditions, make landslides and other slope instabilities possible hazards. Additional natural hazards that could affect the city include flooding and brush/structural fires. Man-made hazards, such as the transportation and storage of hazardous materials, could also potentially endanger the public.

Public safety can be reasonably assured in the city by establishing policies and implementing mitigation measures designed to reduce hazards, provide for emergency response strategies, and coordinate emergency response agencies.

Purpose of the Safety Element

The purpose of the Safety Element is to identify potential safety hazards and to establish appropriate policies to protect life and property from hazardous conditions. An emphasis is placed on relating land use decisions to public safety concerns. The Safety Element also stresses the importance of emergency preparedness in the event of a major disaster.

Scope and Content

This Element contains three sections: Background Information and Issues Identification; Goals, Objectives, and Policies; and the Safety Plan. The Background Information and Issues Identification section contains an extensive analysis of issues that could possibly endanger the public's safety, such as

earthquake-related hazards and flooding. The Goals, Objectives, and Policies section utilizes this information to create objectives for Chino Hills that will protect its citizens and establish a decision-making framework for city leaders to evaluate land use issues for their safety impact. Building on these goals and policies, the Safety Plan provides detailed recommendations for hazard mitigation and ensures that adequate emergency response can be provided when needed.

B. BACKGROUND INFORMATION AND ISSUES IDENTIFICATION

This section describes in detail the hazards that might affect Chino Hills, as well as resources that are available in the event of an emergency. In particular, this Element examines seismic, geologic, flood and inundation, fire, and hazardous material hazards. This background information provided the base data to create the goals and policies which direct decision makers on how to handle safety concerns.

Seismic Hazards

Earthquakes occur when planes of weakness (called faults) in the Earth's crust move past one another in a sudden and violent way. In Southern California, an earthquake of magnitude four or larger has occurred, on average, about every four years since the late 1700s. Earthquakes can trigger several geologic phenomena that can cause severe property damage and loss of life. These hazards include ground shaking, fault rupture, foundation failures caused by liquefaction or subsidence, and waves in enclosed bodies of water (seiches). Earthquakes can also cause a variety of localized, but not less destructive hazards, such as urban fires, dam failures, and releases of toxic chemicals. The City of Chino Hills could be impacted by any or all of these hazards.

Earthquakes are normally classified as to the severity of their magnitude (a measure, using seismographs, of the amount of energy released when a fault ruptures), or their seismic intensity (a qualitative estimate of the damage caused by an earthquake at a given location). Because the amount of destruction generally decreases with increasing distance away from the epicenter (the point at the Earth's surface directly above where the earthquake originated), earthquakes are assigned several intensities. The most commonly used seismic intensity scale, called the Modified Mercalli Intensity (MMI) scale, has 12 levels of damage. The higher the number, the greater the damage (Table S-1). The intensity of seismic ground shaking at any given site is a function of several factors, but primarily the magnitude of the earthquake, the distance from the epicenter to the area of concern, the type of bedrock or soil materials between the epicenter and the site, and the topographic conditions of the site (whether it is located in a valley, or at the top of a hill or mountain). The amount of damage is also controlled to a certain extent by the size, shape, age, and engineering characteristics of the affected structures. Most buildings in Chino Hills are of wood-frame construction. This building type, although not immune to structural damage, is notably resilient to earthquake shaking.

Ground Shaking: Of the numerous faults that have been mapped in the Southern California region, those that could cause significant ground shaking in the City of Chino Hills include the Chino, Whittier, Elsinore, Sierra Madre-Cucamonga, San Jose, San Andreas, Newport-Inglewood, and Norwalk faults. Table S-2 lists the relative likelihood of a major earthquake occurring in the next 30 years on each of these active or potentially active faults. Table S-3 lists the faults most capable of impacting the city in order of potential severity, based on their proximity to Chino Hills and the magnitude of their maximum credible earthquake. Those faults listed as least likely to generate an earthquake in the next 30 years should still be considered in the planning and design process because their maximum credible earthquake could

have a severe impact on the city. Figure S-1 shows the location, relative to the city, of the major active and potentially active faults in the area.

- The *Chino fault* is the northward extension of the Elsinore Fault Zone north of the Puente Hills (the Whittier fault is the continuation of the Elsinore Fault Zone south of the Puente Hills). Some of the canyons that extend across the fault have been deflected right-laterally at the fault zone. In a few localities, older alluvium and relict soils (soils that have been at the land surface since they were formed) appear to be offset by the Chino fault. These observations suggest that the Chino fault has had relatively recent movement, probably in the last 10,000 years (Weber, 1977; Heath et al., 1982). Based on its length, the Chino fault is estimated capable of generating a maximum credible earthquake of magnitude 6.8. Such an earthquake could cause peak horizontal ground accelerations at the city of about 0.35 to 0.60g, with the higher accelerations occurring in the eastern areas of the city, adjacent to the fault (g is the acceleration of gravity, equal to 32 feet per second squared). In general, the amount of damage caused by an earthquake increases with higher peak ground accelerations, and longer durations of shaking). Strong ground shaking from this earthquake would last about 22 seconds.
- The *Whittier fault* is an active fault that extends northwestward from the Horse-shoe Bend area of the Santa Ana River to the Whittier Narrows area in Los Angeles. The fault is located about two miles (four kilometers) to the west of the western limits of the City of Chino Hills. Although no major historical earthquakes have been attributed to the Whittier fault, trenching studies have documented movement on this fault in the last 10,000 years (Gath et al., 1992b, Gath, 1992; T. K. Rockwell and A. Patterson, personal communication, 1992). The Whittier fault is thought capable of producing a

Table S-1
Modified Mercalli Intensity Scale

EFFECTS		MAGNITUDE
I.	Not felt except by a very few, and only under special circumstances.	Below 3.0 magnitude on Richter Scale.
II.	Felt by persons at rest and on upper floors.	3.0-3.9 magnitude on Richter Scale.
III.	Felt indoors. Hanging objects swing slightly. Vibration feels like passing of light trucks. May not be recognized as an earthquake.	4.0-4.9 magnitude on Richter Scale.
IV.	Hanging objects swing noticeably. Vibration like passing of heavy trucks. Standing automobiles rock. Windows, dishes, doors rattle. Glasses clink. Wooden walls and frames creak.	4.0-4.9 magnitude on Richter Scale.
V.	Felt outdoors by most people. Sleepers awakened. Liquids may spill. Small unstable objects displaced. Doors swing, close, open. Pictures move. Some breakage of plaster.	4.0-4.9 magnitude on Richter Scale.
VI.	Felt by all. Persons walk unsteadily. Windows, dishes, glassware broken. Objects, books, etc., off shelves. Pictures off walls. Furniture moved or overturned. Weak plaster and masonry cracked. Small bells ring (church, school). Trees, bushes shaken visibly.	5.0-5.9 magnitude on Richter Scale.
VII.	Difficult to stand. Noticed by drivers of automobiles. Hanging objects shake. Furniture broken. Weak chimneys broken at roof line. Fall of plaster, loose bricks, stones, tiles, cornices; also unbraced parapets and architectural ornaments. Waves on ponds; water turbid with mud. Small slides and caving in along sand and gravel banks. Large bells ring. Concrete irrigation ditches damaged.	6.0-6.9 magnitude on Richter Scale.
VIII.	Steering of automobiles affected. Fall of stucco and some masonry walls. Twisting, fall of chimneys, factory stacks, monuments, towers, elevated tanks. Frame houses moved on foundation if not bolted down; loose panel walls thrown out. Branches broken from trees. Cracks in wet ground and on steep slopes.	6.0-6.9 magnitude on Richter Scale.
IX.	General panic. Masonry destroyed or heavily damaged. General damage to foundations. Frames cracked. Serious damage to reservoirs. Underground pipes broken. Conspicuous cracks in ground.	7.0-7.9 magnitude on Richter Scale.
X.	Most masonry and frame structures destroyed with their foundations. Some well-built wooden structures and bridges destroyed. Serious damage to dams, dikes, embankments. Large landslides. Water thrown on banks of canals, rivers, lakes, etc. Sand and mud shifted horizontally on beaches and flat land. Rails bent slightly.	7.0-7.9 magnitude on Richter Scale.
XI.	Rails bent greatly. Underground pipelines completely out of service. Damage severe to wood-frame structures, especially near shock centers. Few, if any, masonry structures remain standing. Large, well-built bridges destroyed by the wrecking of supporting piers or pillars.	8.0-8.9 magnitude on Richter Scale.
XII.	Damage nearly total. Large rock masses displaced. Lines of sight and level distorted. Objects thrown into air.	8.0-8.9 magnitude on Richter Scale.

Source: Orange County Fire Department, Emergency Management Division, 1986.

Table S-2
Relative Likelihood of a Maximum Credible Earthquake
Occurring on Selected Faults in Southern California

Fault Name	Maximum Credible Earthquake	Relative Likelihood of Occurrence
San Jacinto (Lytle Creek - Claremont)	7.0	High
San Andreas (Mojave)	7.5	High
San Andreas (Mojave-San Bernardino)	7.8	High
San Andreas (San Bernardino Mountains)	7.5	Moderate
San Andreas (3 segments)	8.0	Moderate
San Andreas (Coachella - San Bernardino)	7.8	Moderate
Elsinore	7.1	Low
Cucamonga	6.6	Low
Whittier	7.3	Low
Newport-Inglewood	6.9	Low
Sierra Madre	6.4	Low
San Jose	6.7	Unknown, Probably Low
Chino	6.8	Unknown, Probably Low

Note: This table shows the maximum credible earthquake (MCE) each one of these faults is predicted capable of generating, and the relative likelihood of such an earthquake occurring within the next 30 years. The probabilities are ranked as high, moderate, and low as follows: high - greater than 15 percent, moderate - 5 to 15 percent, low - less than 5 percent. These probabilities are based on published, estimated return periods for the maximum credible earthquakes (Wesnousky, 1986; The Working Group, 1988). The probabilities were calculated using a Poisson distribution, which does not take into account when the last earthquake occurred on each of these faults. The San Jose and Chino faults have not been studied in sufficient detail to assign them an estimated return period for their maximum credible earthquake.

Table S-3
Relative Impact of Selected Earthquakes
on the City of Chino Hills

Fault Name	PGA* (%g) in Chino Hills	Modified Mercalli Intensity MMI in Chino Hills
Chino	0.35-0.60	VIII-IX
Whittier	0.35-0.55	VII-VIII
San Jose	0.15-0.35	VI-VII
Cucamonga	0.13-0.25	VI-VII
Sierra Madre	0.12-0.22	V-VII
San Andreas (3 segments)	0.15-0.20	VI
Elsinore	0.13-0.20	VI
San Andreas (Mojave -San Bernardino)	0.14-0.17	VI
San Andreas (Coachella - San Bernardino)	0.14-0.17	VI
San Andreas (Mojave)	0.14-0.14	V-VI
San Andreas (San Bernardino Mountains)	0.11-0.14	V-VI
San Jacinto (Lytle Creek - Claremont)	0.11-0.14	V-VI
Newport-Inglewood	0.05-0.10	IV-V

* Peak Ground Acceleration

Note: This table shows the same faults shown in Table S-2 herein ranked according to their potential impact on the City of Chino Hills. PGA - Peak Ground Acceleration - refers to the mean peak horizontal peak ground acceleration (as a percentage of g, the gravitation constant equal to 32 feet per second squared) that a maximum credible earthquake is thought capable of generating in the city (values calculated using Campbell, 1988). Higher accelerations could occur locally. In general, those areas of the city farther away from the causative fault will experience lower peak ground accelerations. The peak ground accelerations have been converted to Modified Mercalli Intensity (MMI) values using the curves prepared by Evernden and Thomson (1985) for the 1971 San Fernando Earthquake. These intensity values are for sites underlain by saturated, loose deposits (Holocene alluvium). Intensities in bedrock sites could be almost two (II) intensity values less than the MMI values shown above.

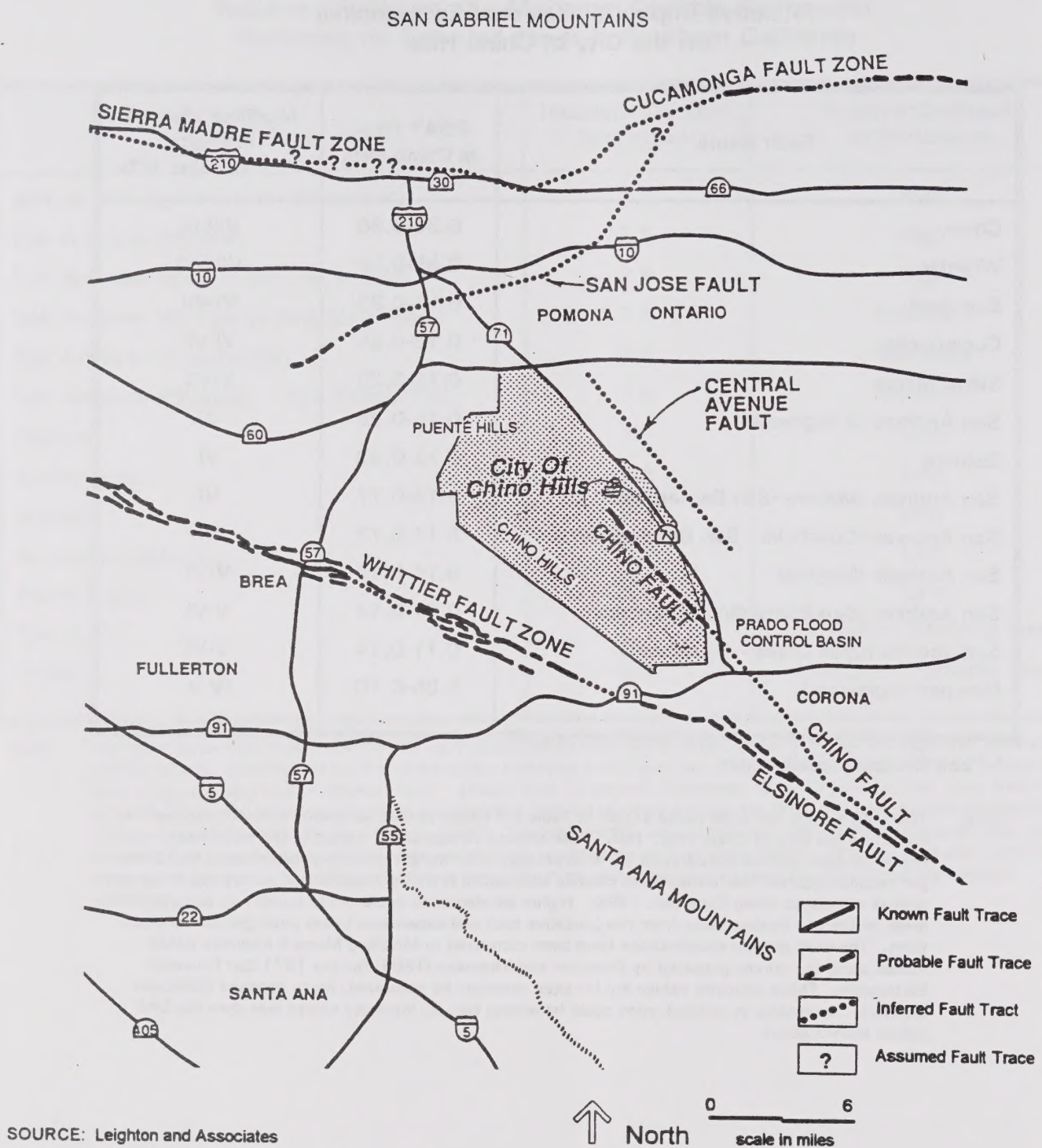


Figure S-1
Active and
Potentially Active Faults

maximum credible earthquake of magnitude 7.3. Such an earthquake would generate peak horizontal ground accelerations of approximately 0.45 to 0.55g in the western portions of the city, around Sleepy Hollow, and 0.35 to 0.45g in the eastern areas. Strong ground shaking is estimated to last about 31 seconds.

- The *Elsinore Fault Zone* consists of a series of strands that extend from the Santa Ana River southeastwards to south of the United States at the Mexican border. Some of these fault strands are known to be active based on offset stratigraphy and geomorphic evidence. The Glen Ivy North strand is thought to have been the source of the 1910 magnitude 6.0 earthquake (Ziony et al., 1985). The closest segment of the Elsinore fault is located 19 miles (31 km) from the city. A maximum credible earthquake of magnitude 7.1 would generate peak horizontal ground accelerations of about 0.13g to 0.2g, with an estimated duration of shaking of 27 seconds.
- The *Sierra Madre Fault Zone* consists of several fault segments that flank the southern margin of the San Gabriel Mountains. These mountains have formed, and are continuing to form, as a result of vertical movement along this Fault Zone. The San Fernando segment has moved in historic times, causing the 1971 San Fernando Earthquake of magnitude 6.6. The closest segment of the Sierra Madre fault to the City of Chino Hills is located about 8 miles (13 km) to the north-northwest. This fault segment is thought to be capable of producing an earthquake of about magnitude 6.4, which would generate peak horizontal ground accelerations of about 0.12g to 0.22g. Strong ground shaking in the city would last about 18 seconds.
- The *Cucamonga fault* is the continuation of the Sierra Madre Fault Zone to the southeast, as it extends along the base of the San Bernardino Mountains. This fault is about 9 miles (15 km) at its closest location to the city. If the Cucamonga fault were to break along its entire length, the resultant maximum credible earthquake of magnitude 6.6 could generate peak horizontal ground accelerations of about 0.13g to 0.25g in the City of Chino Hills. Strong ground shaking in the city would last about 20 seconds.
- The *San Jose fault* is an 11 mile (18 km) long fault splay that branches southwestward from the Cucamonga-Sierra Madre Fault System in the Upland area. The two Upland earthquakes (1988 and 1990) have been attributed to this fault (Hauksson, 1991). These earthquakes do not appear to have released all of the strain on this fault; therefore, Hauksson suggests that future moderate-sized earthquakes could occur on the San Jose fault. A worst-case scenario earthquake on this fault, rupturing the entire length of the fault, would result in a magnitude 6.7 earthquake that could cause peak horizontal ground accelerations of about 0.15g in the southern areas of Chino Hills and 0.35g in the northern areas of the city. The expected duration of strong ground shaking from such an earthquake is 21 seconds.
- The *San Andreas fault* is widely recognized as the longest and most active fault in California. Its activity is known from historic earthquakes (some of which have caused rupture of the ground surface), and from many fault studies which have shown that the San Andreas offsets or displaces recently deposited sediments. The San Andreas fault has been mapped from Cape Mendocino in northern California to an area near the Mexican border, a distance of about 900 miles. Recent work indicates that large earthquakes have occurred along the fault at time intervals averaging about 160 years, and that during these major earthquakes, the fault breaks along distinct segments. In Southern California, the San Andreas fault is divided into three segments, the Mojave, San Bernardino, and Coachella segments. The closest segments of the San Andreas fault to the city are the Mojave and San Bernardino segments,

which are located about 25 miles (40 km) to the north and east, respectively. Each of these segments is thought capable of producing a maximum credible earthquake (a worst-case scenario) of magnitude 7.5. Such events would generate peak horizontal ground accelerations at the city of about 0.11 to 0.14g. If two or more segments broke simultaneously during an earthquake, for example the Mojave and San Bernardino segments, the resulting maximum credible earthquake of estimated magnitude 7.8 could generate peak horizontal ground accelerations of about 0.14g to 0.17g at the city. Ground shaking from such an event would last about 44 seconds in Chino Hills. If all three segments of the southern San Andreas fault ruptured during an earthquake, the "Big One", of estimated magnitude 8.0, could cause peak horizontal ground accelerations in the city of about 0.15 to 0.2g, with a duration of strong ground shaking of about 50 seconds. Notice that an earthquake on the San Andreas fault would cause smaller peak ground accelerations (and, therefore, less damage) in the city than a maximum credible earthquake on many of the other, less distant faults.

- The *Newport-Inglewood fault* has been associated with several historical earthquakes, including the December 8, 1812, earthquake in San Juan Capistrano, the June 21, 1920, event in Inglewood, and the March 10, 1933, Long Beach earthquake of magnitude 6.3. The segment of the Newport-Inglewood Fault System closest to the city, located about 23 miles (36 km) to the southwest, is thought capable of producing earthquakes of up to magnitude 6.9. Such an event would generate peak horizontal ground accelerations at the city of up to 0.10g with an estimated duration of strong ground shaking of 24 seconds.
- The *Norwalk fault* is a buried thrust fault that is responsible for uplift of the Coyote Hills. The 1929 Whittier Earthquake of Richter magnitude 4.7 was attributed to this fault by Richter (1958). The fault is

known from subsurface data only, including oil well logs, water well logs, and seismic profiling (Tan et al., 1984). The fault is poorly understood because of limited existing data on the length of the fault and its structural characteristics. It is, therefore, difficult to estimate the magnitude of the maximum credible earthquake that the Norwalk fault could generate, and the peak ground accelerations that the fault could cause in the City of Chino Hills. Richter (1958), however, has suggested that the fault is capable of causing an earthquake of magnitude 6-1/4.

Hazard Analysis: Strong ground shaking during an earthquake generally causes significant damage, primarily because it propagates to areas far away from the earthquake epicenter. Furthermore, the seismic hazard of ground shaking is difficult to predict because there are many parameters that control how structures interact with, and respond to, the ground motions caused by an earthquake. For most conventional developments, the conscientious application of the design and construction guidelines set forth in the Uniform Building Code are sufficient to reduce the hazard of ground shaking to an acceptable level. Most structures designed to current building code standards will remain standing, although maybe not without damage, during an earthquake. Critical facilities, however, should be designed based on elaborate site-specific calculations that take into account the geological and seismological characteristics of the region and the site where the facility is being proposed (Borcherdt, 1985).

Strong ground shaking is affected significantly by the local geologic conditions, such as whether a site is underlain by hard bedrock or unconsolidated deposits (such as river channel sediments). The importance of local site conditions on the level of ground shaking has been documented again and again. For example, most of the damage in the Marina District of San Francisco during the 1989 Loma Prieta Earthquake resulted because this area is underlain by loose, uncompacted artificial fill and mud bay deposits. Areas

underlain by hard bedrock, even when located tens of miles closer to the source of the earthquake, were not impacted as severely as the Marina District.

The design and construction characteristics of a building or structure also control the amount of damage that the building is likely to experience during an earthquake. Older structures, built to less stringent code requirements, generally do not perform as well as newer structures. The San Fernando Earthquake of 1971 prompted a major revision of the building codes used in California, including adoption of the 1972 Hospital Seismic Safety Act that identifies the Office of the State Architect as the entity responsible for ensuring that hospitals are earthquake-resistant. Similarly, the 1933 Field Act, which requires that public schools and community colleges be earthquake-resistant, was adopted as a result of the many schools damaged during the Long Beach Earthquake of 1933.

Based on their performance during past earthquakes, certain building types are more likely to be damaged during an earthquake. These buildings include:

- Unreinforced masonry structures - All jurisdictions were mandated by the State to inventory their unreinforced masonry structures by January 1990, and to develop programs to minimize the safety hazards associated with these buildings. These buildings tend to perform poorly during an earthquake due to inadequate anchoring of the masonry walls to the roof and floor diaphragms, limited strength and ductility of the building materials, and poor construction.
- Wood-frame structures (especially those built before 1952) - Inadequate connection between the superstructure and the foundation often makes these buildings slide off their foundations during an earthquake.
- Precast concrete tilt-up buildings (especially if built before 1973) - Wall panels may not be anchored adequately to the

walls and roof and floor diaphragms. The weak connections and anchors have been known to pull out of the walls during an earthquake, causing the ceilings or floors to collapse. The pancake-style of failure can cause heavy losses of life if people are trapped between floors. The heavy debris generated by such a failure makes location and extrication of victims a dangerous and lengthy process, requiring heavy equipment to tunnel through or lift the large concrete panels.

- Soft-story buildings - These buildings generally have one floor (usually the first floor used as a garage) that has few shear walls and therefore lacks the strength necessary to resist the lateral forces characteristically caused by earthquakes. These buildings may sustain significant amounts of damage, or even collapse, during an earthquake. Buildings where the first floor has large window openings used for display purposes (such as a retail store) also classify as soft-story construction.
- Mobile homes - These structures tend to fall over during earthquakes, especially if aligned perpendicular to the direction of movement along the fault.
- Buildings with unusual architectural features, such as long spans, minimal amount of interior shear walls, or irregular shapes.
- Dilapidated or improperly maintained buildings.

The distance between the earthquake source and the site or area of concern also determines to a certain extent the type of damage that will occur. The seismic waves that cause the strong ground motions felt during an earthquake change in character with distance away from the earthquake source. Within about 10 miles of the epicenter, the seismic waves are jerky, rough, and of high frequency. These waves generally affect primarily short buildings, such as single-story residential and commercial structures. Ten and more miles away from the epicenter, the

seismic waves that predominate are of longer periods, and manifest themselves as a slow rolling motion. These waves are more likely to cause high-rise buildings, and buildings with large floor areas, to vibrate vigorously and therefore suffer damage.

Fault Rupture Hazards: The potential for surface rupture on a specific fault is determined by the youngest geologic layer that the fault is known to offset. In California, faults that have been proven by direct geologic evidence, such as trenching, to offset sediments that are less than 10,000 years old are considered active. Active faults are assumed to have the highest probability of breaking again in the future, perhaps even during the lifetime of the proposed development. To reduce the hazard of surface fault rupture, with consequent damage to structures directly overlying the trace of an active fault, the Alquist-Priolo Special Studies Zones (APSSZ) Act of 1972 (Hart, 1990), requires that geologic investigations be conducted in areas where a Special Studies Zone has been designated to locate the trace(s) of the fault. Once the fault is located and its activity assessed, setbacks from the fault are normally prescribed. Structures meant for human habitation are not allowed to be built within a certain distance from the fault zone. The APSSZ Act allows individual jurisdictions to create special studies zones around faults not yet recognized by the State as active.

The Chino fault extends in a southeasterly direction from Los Serranos in Chino Hills to south of Prado Dam in the city of Corona (Figure S-1). The fault zone consists of several curvilinear, possibly intersecting, traces that presumably merge into one fault plane at depth that dips, on average, 45 to 60 degrees to the southwest. The Chino fault is a reverse fault; the southwest side (the Chino Hills side) is up relative to the northeast side (the Chino Basin side). Bedrock of the Yorba and Sycamore Canyon members of the Puente Formation on the southwest has been faulted against younger rocks of the Sycamore Canyon Member on the northeast side. The total maximum vertical displacement of these units has been estimated at about 2,400 feet just north of

Prado Dam (Gray, 1961; Durham and Yerkes, 1964; Weber, 1977; Heath et al., 1982).

Numerous breaks in slope, springs and seeps, and deflected canyons along the fault zone suggest that the Chino fault is an active structure. However, very few trenching studies have been conducted on the Chino fault, and those studies that have been published have not documented Holocene displacements on this fault. For State definition purposes, therefore, the Chino fault is presently considered potentially active, and an Alquist-Priolo Special Studies Zone has not been designated by the State around this fault. Additional trenching studies should be conducted along the mapped trace of the fault to evaluate whether the fault is indeed an active structure, as suggested by the geomorphology of the area.

Although the Chino fault is not within an Alquist-Priolo Special Studies Zone, San Bernardino County has designated a "Geologic Hazard Special Studies Zone" around the Chino fault (San Bernardino County Seismic and Public Safety Element, 1974). Because of this designation, geologic investigations of potential fault rupture hazard, including subsurface trenching, are required at the tentative map stage for the Chino fault. The County's Safety Element (1974) also requires that appropriate construction setbacks from specific fault traces be made during subsequent land development stages, as warranted by the fault studies.

Delineation of the potential fault constraint should not be interpreted as an absolute restriction for any type of development. However, prudent land use planning should dictate that, wherever possible, the following guidelines be observed:

- Important high-occupancy or critical structures, including schools, hospitals, shopping centers, and fire and police facilities, should not be located within the delineated fault zone.
- Residential development is permissible, but with the acknowledgement that lower lot densities may result from the require-

ment of incorporating restricted, non-structural areas as part of buildable lots.

- Use of portions of restricted fault zone areas as "pocket" parks or recreational areas may be feasible and appropriate.
- Planning of streets or utility lines probably would not be significantly constrained by the fault zone; however, they should not be placed parallel to and on top of the fault zone, nor should water tanks or reservoirs be sited within it.

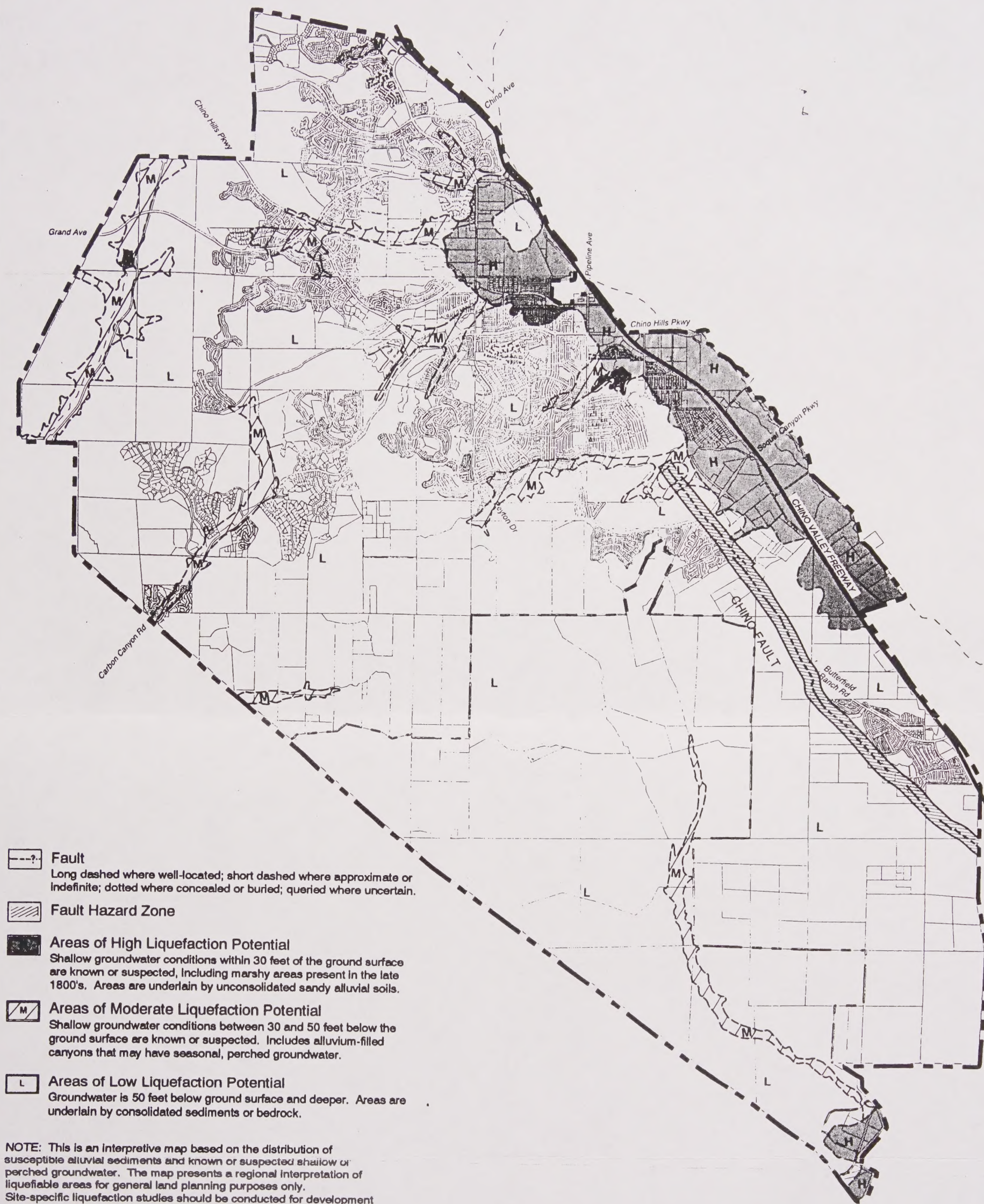
Several other faults associated with the Whittier Fault Zone occur in the City of Chino Hills. These faults include several unnamed east- and northeast-trending faults that branch from the Whittier fault, and several east-trending faults such as the Diamond Bar and Arnold Ranch faults. These faults offset bedrock units in the Puente Formation (refer to the Geologic Hazards Section), and are therefore known to have been active during late Miocene time, approximately five to nine million years ago (Yerkes and Durham, 1964). Although none of these faults is likely to generate an earthquake on its own, those faults structurally associated with the Whittier fault could rupture during an earthquake on the Whittier fault. Further studies need to be conducted to evaluate this possibility. In the meantime, these faults should be considered potentially active.

In addition, there are a few faults near the southeastern end of the Chino Hills, including the Scully Hill and Aliso Canyon faults, that may be accommodating, together with the Whittier and Chino faults, some of the movement transferred by the Elsinore fault into the Los Angeles Basin. If this is so, these faults are active. However, detailed trenching studies need to be conducted (and the data published) to evaluate the activity of these faults before the faults can be upgraded from potentially active to active. The Aliso Canyon fault cuts off a few of the unnamed east- and northeast-trending faults mentioned above. The faults that have been cut off can be considered inactive.

Liquefaction: Liquefaction may occur when loose, unconsolidated, saturated fine- to medium-grained sandy soils are subjected to vibrations, such as during an earthquake. This occurs in areas where the groundwater table is within 50 feet of the ground surface, and if the Modified Mercalli intensities are VII and greater. When liquefaction-prone sediments are shaken, a sudden increase in pore water pressure causes the soils to lose strength and behave as liquid. Excess water pressure is vented upward through fissures and soil cracks causing a water-soil slurry to bubble onto the ground surface. The resulting features are called sand boils, sand blows, or "sand volcanoes". Liquefaction-related effects include loss of bearing strength, ground oscillations, lateral spreading, and flow failures, or slumping. Structures built on soils that liquefy may sink or topple over as the soil loses its bearing strength.

Marshes, with groundwater at or near the ground surface, have occurred historically in some of the areas adjacent to Chino Creek, along the northeastern portions of Chino Hills (Fife et al., 1976). These areas have a high potential for liquefying if groundwater rises to these historical levels. Other areas in the eastern portion of the city that are underlain by recently deposited stream deposits (alluvium) are also susceptible to liquefaction if groundwater occurs within 30 feet of the ground surface. Refer to Figure S-2 for an overview of the areas in the City of Chino Hills that may have a high susceptibility to liquefaction.

Most of the canyons in the city, including Tonner, Carbon, Soquel, Aliso, Bane, Slaughter, and Abacherli canyons, are also filled with unconsolidated deposits that have the potential for liquefying if groundwater occurs within 50 feet of the ground surface. The liquefaction potential of the deposits in these drainages may be seasonally controlled, with shallow groundwater conditions occurring temporarily after extended rainfall periods. These canyons are shown as having a moder-



SOURCE: Leighton and Associates, Inc.

North 0 5000 scale in feet

Figure S-2
Seismic Hazards
Fault Rupture and
Liquefaction Susceptibility

ate liquefaction potential on Figure S-3. The liquefaction potential for areas underlain by older alluvium and bedrock units is considered low.

Vulnerability of the City of Chino Hills to Seismic Hazards: Most injuries and property damage from a major earthquake impacting the city will be caused by strong ground motion, especially structural and nonstructural damage to buildings. The City of Chino Hills is developed mostly into low density and medium density residential zones. Less extensive areas are devoted to low-rise commercial development. Low-rise buildings (less than three stories) common in the city are more likely to be damaged by an earthquake on a nearby source, such as the Chino or Whittier faults.

Residential Development: The wood-frame construction used in the residential and some commercial development in the city generally performs well during earthquakes. These buildings may experience significant structural and nonstructural damage, but rarely collapse. However, a trend in wood-frame construction in recent years, particularly in housing construction, has been the split-level and irregular floor plan. Earthquake intensities of $MM = VIII$ can cause torsional racking of the foundation and wall elements of irregularly shaped structures. Split-level houses are also susceptible to damage caused by the weakness of the pole platforms or pole structures used to support the structure. Vertical changes in strength are termed "soft-stories" and are also manifested in other types of construction.

Single-family residences built before the 1952 Building Code was implemented are more likely to slip off their foundations as a result of strong ground motion associated with near-field earthquakes. Mobile homes are also susceptible to slipping off their foundations and should be secured.

Commercial and/or Industrial Development: Buildings using tilt-up concrete walls are found in some commercial development in Chino Hills. Roof collapse has been observed in some pre-1971 commercial buildings using

this type of construction. Concrete and steel-framed buildings are more earthquake-resistant forms of commercial construction and should be encouraged. Unusual architectural features such as long spans, minimal amount of interior shear walls, or irregular shapes may also be found in commercial development. These features can result in significant damage or collapse.

Critical Facilities: Critical facilities must remain operational after an earthquake; facilities that pose unacceptable risks to public safety if severely damaged are also of critical concern. Essential facilities, such as hospitals, fire and police stations, emergency centers, and communication centers, are needed during an emergency. High-occupancy facilities have the potential of resulting in a large number of casualties or crowd control problems. This category includes churches and large multi-family residential complexes. Dependent care facilities that house populations with special evacuation considerations, such as preschools and schools, group care homes, and nursing and convalescent homes, are also considered critical facilities.

It is paramount to ensure that critical facilities designed for human occupancy possess no structural weaknesses that can lead to collapse. The State has jurisdictional responsibility to ensure that public schools are adequately constructed to seismic standards (Field Act, 1933; Garrison Act, 1969).

Any multi-story development planned to be constructed in the city should be built to the latest building code specifications, and should include site-specific seismic response analyses, especially if located in areas identified as having a moderate to high susceptibility to liquefaction. The Chino Valley Independent Fire District is responsible for inspections of deficient electrical, plumbing, mechanical, or fire safety fixtures in high-occupancy residential and commercial facilities. This works to prevent earthquake-induced hazards, as well as improving day-to-day fire safety.

in some way. The Commission has been asked to study the problem of the city's water supply and to report on it by the end of the year.

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Unreinforced Masonry Buildings: There are four known unreinforced masonry structures in the City of Chino Hills (Eric Norris, City of Chino Hills, 1994).

Nonstructural Hazards: Nonstructural damage is perhaps the largest expected source of injury in an earthquake. Buildings with exterior nonstructural hazards such as cornices and parapets pose hazards to the public if not properly secured. Toppled furniture, book shelves, and interior equipment and decor pose additional hazards. In a case where continued function is paramount (i.e., critical facilities such as the fire stations or City Hall), special efforts should be made to ensure that communication equipment and emergency generators are not damaged.

Issues and Opportunities - Seismic Hazards

1. The primary seismic hazard in the City of Chino Hills is severe ground shaking; several nearby seismically active faults can cause strong ground motion in the city. The simultaneous occurrence of earthquake-induced landslides, isolated structural damage, impaired utility service, and fire caused by strong ground motion require adequate emergency response plans.
2. A magnitude 6.8 earthquake on the Chino fault could generate seismic intensities in the VIII to IX range in the city. The seismic wave frequencies generated by this earthquake will be particularly damaging to the low- to mid-rise buildings prevalent in the city. This earthquake would cause the most damage in the eastern parts of the city, adjacent to the Chino fault. This fault also poses a potential surface rupture hazard.
3. A magnitude 7.3 earthquake on the Whittier fault could generate seismic intensities in the VII to VIII range in the city. This earthquake would impact the western portions of the city.

4. The San Jacinto fault is considered the most seismically active fault in the region. A maximum credible earthquake on the Lytle Creek-Claremont segment of the San Jacinto fault is expected to generate mean peak horizontal ground accelerations in the city of about 0.11g to 0.14. Although these mean peak ground accelerations are not considered threatening to most development in the city, this fault should be considered during the planning and design process. Additional faults listed in Table S-2 should also be considered. Maximum probable earthquakes to be used for design purposes should be recommended on a case-by-case basis, depending on the nature of the proposed project.
5. The City of Chino Hills is located within Seismic Zone 4 specified in the Uniform Building Code. The design and construction standards contained in the Building Code should be applied to any proposed conventional development in the city. Site-specific geologic and seismic studies need to be conducted prior to the design and construction of a critical facility.
6. Coordination among prospective building owners, architects, and structural engineers is necessary to ensure that design flaws are identified early in the review process. City-retained building inspectors should review high-occupancy residential, commercial, and other critical facilities with consideration of the following:
 - Symmetrical, concrete, and steel-framed buildings are particularly earthquake-resistant forms of commercial construction and should be encouraged.
 - Irregularly shaped buildings are more difficult to design to withstand strong ground motions and are therefore more susceptible to damage during an earthquake. Irregularly shaped buildings should be discouraged.

- Buildings with adverse discontinuities in strength between major structural elements, such as soft-story designs, are susceptible to earthquake damage and should be discouraged.
 - Commercial pre-cast tilt-up construction must have adequate diaphragms (the horizontal bracing system that transmits horizontal forces to vertical-resisting components) and adequate tie-ins or connections between structural components to prevent roof collapse.
 - Nonstructural elements must not block exit routes and constrain rescue operations if damaged or overturned during a tremor.
 - Stairways and elevators should be adequately strengthened, and non-structural components such as emergency generators, computers, and cabinets should be anchored.
7. Earthquake damage to wood-frame single-family residential structures from near-field sources will be slight to moderate, and limited to walls thrown out of plum, fallen chimneys, and torsional racking of foundation and wall elements. Slippage of structures off their foundations may be prevalent in pre-1952 houses and in mobile homes. Information regarding the benefits and procedures for correcting structural and non-structural hazards in private residences should be made available as part of a voluntary seismic upgrading program.
 8. The City of Chino Hills contains four unreinforced masonry structures. Information about reinforcing these structures should be made available as part of a voluntary seismic upgrading program.
 9. The City could consider conducting a structural inventory of the older, pre-1973 commercial facilities in the city to identify existing design weaknesses, such as soft-story, tilt-up concrete construction or irregular structural or non-structural design. To identify and correct safety hazards in critical facilities, the City can require a review by a structural engineer when a building undergoes substantial improvement or resale.
 10. There are currently no Alquist-Priolo Special Studies Zones (APSSZ) within the City of Chino Hills. However, a Fault Hazard Zone has been established around the Chino fault, which extends along the eastern portion of the city. The identified fault traces of the Chino fault should be considered active, including provisions for setbacks of structures for human occupancy away from the fault trace. Critical facilities should be placed at greater distances from the fault trace than conventional development. Other faults associated with the Chino fault, or with the Whittier fault, may also be active.
 11. Fault zones should be clearly identified on parcel maps to increase public awareness of fault rupture risks.
 12. Several areas along Chino Creek and in the canyon bottoms that drain the city may have a moderate to high susceptibility to liquefaction.
 13. The Chino Valley Independent Fire District operates three fire stations in the City of Chino Hills. These are located at 4040 Eucalyptus Avenue, 16231 Canon Lane, and 13707 Peyton Avenue. Simultaneous evacuation of high-occupancy structures and the occurrence of earthquake-induced fires in the city could tax the Fire District's manpower resources.
- Water pipelines can be damaged by surface rupture, liquefaction, landslides, or high frequency seismic waves if significant vertical or horizontal displacements of the ground occur (NCEER, 1989). Breaks in the water distribution pipelines can result in significant reductions in water pressure that can slow post-earthquake fire suppression efforts. Water reservoirs in the city are generally

adequate to provide at least a three-day supply of water. Lake Los Serranos, Arnold Reservoir, other smaller ponds and stockponds in the city, and swimming pools can also be used as sources of water for fire suppression efforts.

14. The City of Chino Hills is supplied with electrical power by the Southern California Edison Company. High-frequency ground motions characteristic of a near-field earthquake and seismic intensities as low as VII can seriously disable the electrical network system (Hayes, 1987; Toppozada et al., 1988). In case of a major earthquake in the area, residents should prepare to have no electricity for at least three days.
15. Damage to computer switchboards and power loss will impair emergency communications. The EOC, fire stations, and City Hall should be equipped with radio equipment capable of monitoring several frequencies. These can serve as temporary communication links with similarly equipped facilities in the area. Telephone systems may be used if the computer switchboards are not damaged and the lines are not saturated.
16. Damaged natural gas pipelines and connections may result in service disruption, and in some cases, fire.
17. The potential for earthquake-induced hazardous materials accidents in the city and in adjacent jurisdictions must be addressed in disaster planning scenarios for the City of Chino Hills. Hazardous materials issues are discussed further in the Hazardous Materials subsection of this Element.

Geologic Hazards

The City of Chino Hills is located in the eastern Puente Hills, in the northern portion of the Peninsular Ranges geomorphic province. The Peninsular Ranges province is characterized by a series of northwest to southeast-oriented valleys, hills, and mountains separat-

ed by faults associated with, and parallel to the San Andreas Fault System. Two of these faults, the Chino and the Whittier, are located in and near the City of Chino Hills, respectively. These faults, and the bedrock and sediment types that occur in the Chino Hills area, control to a large extent the potential geologic impacts that will be discussed below.

The hilly portions of Chino Hills are underlain by bedrock of the Puente Formation, which was deposited approximately eleven to six million years ago when this area of Southern California was under water. In the last two to three million years, the sea that covered the area receded westward as the land rose, and a complex process of faulting and folding formed the rolling hills that we know today as the Puente (Chino) Hills. The rocks of the Puente Formation, originally deposited in horizontal layers on the ocean floor, are now folded, and dip between 10 and 20 degrees from the horizontal. Locally, beds of the Puente Formation dip as steep as 45 to 60 degrees. The folded nature of these rocks, especially where thinly bedded or laminated, combined with the steepness of the terrain in the central and western portions of the city, makes this one of the most landslide-prone areas in Southern California.

Based on rock type, the Puente Formation is divided into four subunits, or members, named (from oldest to youngest) the La Vida, Soquel, Yorba, and Sycamore Canyon. Of these, only the Soquel, Yorba, and Sycamore Canyon members occur in the city. The Soquel Member consists of thick deposits of yellowish brown to light gray sandstone with thin layers of siltstone. The next youngest unit, the Yorba Member, consists predominantly of pinkish-brown to gray siltstone with a few layers of sandstone. The siltstone layers of the Yorba member are often severely contorted, crumpled, and fractured. Soil creep and landslides are common in hillsides underlain by this member. The Sycamore Canyon Member is composed of light brown to light gray sandstone with beds of pebbles and cobbles. In some areas, the sandstone may have thin layers of siltstone. All mem-

bers combined, the Puente Formation is about 13,000 feet thick in the Chino Hills area.

Bedrock of the Topanga Formation is exposed in the southeastern corner of the city, adjacent to the Horseshoe Bend area of the Santa Ana River. This rock formation was deposited about 15 million years ago, and consists of marine, light yellowish brown to nearly white sandstone with lenses of conglomerate. Thin siltstone layers may also occur locally within this sandstone. The Topanga Formation occurs in the subsurface, under members of the Puente Formation, in most of the eastern Chino Hills area (Durham and Yerkes, 1964).

Between two million and 20,000 years ago, ancient stream channels draining the newly emerged Chino Hills and the mountains to the east deposited sediments on their way to the ocean. These older alluvial sediments consist of semi-consolidated, poorly sorted, clayey gravel, sand, and silt. In the last 10,000 years (the Holocene epoch) these older deposits have locally been buried by younger sediments deposited in active stream channels. Younger storm channel deposits (alluvium), including that deposited by the Santa Ana River, consist of unweathered, unconsolidated, poorly sorted but locally crudely stratified gravel, sand, and silt.

Landslides and Slope Instability: A landslide is a mass of rock or soil that has been displaced downslope by sliding, flowing, or falling. Slope failures can occur very rapidly on steep slopes (at rates of tens of miles per hour), or almost imperceptibly slowly (creep) on gentle slopes. Factors that influence the stability of a slope include the characteristics of the rock or soil materials that make up the slope, moisture, rainfall intensity, steepness of the terrain, geologic structure (such as the dip angle and direction of the beds, joints or fractures in the material, faults, etc.), and human activity.

The siltstone and sandstone beds in the Puente Formation are often intensely fractured, and crumpled, and are therefore relatively weak. Most large landslides in the

Puente Hills area are thought to have occurred ten- to twenty-thousand years ago when the climate in this region was wetter than today (Fife et al., 1976; Tan, 1988). These landslides are in delicate equilibrium with their environment and can be reactivated during periods of intense rainfall if subjected to strong ground motions during an earthquake, or as a result of slope modification, whether by natural or man-induced processes.

Increased water content in a slope can contribute to slope instability by increasing the weight of the soil materials on the slope, by softening planes of weakness such as faults, or by increasing the pressure exerted by water in the pores of the soil (pore pressure). Excessive rainfall can saturate the soils on a slope, contributing to slope failure. Water introduced into a slope as a result of excessive landscaping irrigation, or from a broken water or sewer line, can also cause slope instability problems. Water is the dominant agent of slope failure.

Slope modification as a result of road construction and urban development can also render slopes unstable. Slope instability may occur when bedding planes intersect the face of either a natural slope or a designed cut slope. Many of the slopes in the Puente and Chino hills could be rendered unstable during grading since bedding of the Puente Formation is often highly contorted and folded. Failures are particularly numerous on slopes underlain by the Yorba and Sycamore Canyon Members of the Puente Formation (Yerkes, 1972; Tan, 1988). To mitigate this potential hazard, detailed geotechnical studies need to be conducted prior to development in the hilly portions of the city. The studies would evaluate whether out-of-slope bedding conditions exist in the area proposed for development. Where feasible, the grading plans can be modified to mitigate the unstable slope conditions. Many landslides can also be stabilized by placing a fill mass (buttress fill) in front of the slide. Its mass keeps the landslide materials from sliding.

Figure S-4 is a relative landslide susceptibility map for Chino Hills based on work done by Tan (1988). Tan (1988) classified the slopes in the Puente and Chino hills into four landslide susceptibility areas based on the following criteria:

- The occurrence and distribution of landslides and features indicative of slope instability;
- Geology of the area including bedrock type, engineering properties of the bedrock materials as they relate to slope instability, and data on bedding, folding, and faulting; and
- The relative behavior of the slopes within the area based on a review of aerial photographs and field observations.

The four landslide susceptibility areas as described by Tan (1988) follow:

- Area 1 - Least Susceptible Area: Landslides and features related to slope stability are very rare to nonexistent within this area. Included within this area are low-lying valley bottoms and floodplains. Also included are broad, relatively level areas along the tops of ridges underlain by resistant rock that is either exposed at the surface or covered only by shallow soil or colluvium. Land within Area 1 will probably remain relatively stable unless the topography is radically altered.
- Area 2 - Marginally Susceptible Area: This area includes gentle to moderate slopes underlain by relatively competent material or colluvium that is considered unlikely to reactivate under natural conditions. The stability of slopes within Area 2 may change radically in response to future natural or artificial alteration of the adjacent terrain.
- Area 3 - Generally Susceptible Area: Slopes within this area are at or near their stability limits due to a combination of weak materials and steep slopes. Although most slopes within this area do not currently contain landslide deposits,

the materials that underlie them can be expected to fail locally when modified by natural processes or the activity of man.

- Area 4 - Most Susceptible Area: This area is characterized by steep slopes and includes most landslides in upslope areas, whether apparently active at present or not, and slopes which have substantial evidence of downslope creep of surface materials. Land within this area should be considered naturally unstable and subject to failure even in the absence of human activity.

Despite the mapping classification, site-specific investigations are still necessary to determine potential slope instability problems at the specific tract or parcel size.

Development projects must identify and address landslide susceptibility as a condition of project approval. According to the San Bernardino County General Plan (1991), site-specific stability analyses and slope stability reports, staff review of slope instability areas shown on seismic/geologic maps or other in-house data, or a staff field check is necessary within landslide hazard areas or where required by the City Geologist. Because of the potential relationship between seismic activity and landsliding effects, the city shall require that a seismic analysis be included as a part of landslide stability studies when required by the Public Works Department.

Earthquake-Induced Landsliding: Earthquake-generated strong ground motions can worsen existing unstable slope conditions. For example, several large, dormant, deep-seated landslides in the Santa Cruz Mountains were reactivated during the 1989 Loma Prieta Earthquake. Typical earthquake-induced landslides in terrain similar to that of the Chino Hills area could include rotational slumps, rock falls, shallow slumps, and slides commonly associated with moderate to steep road cuts and natural slopes. If the slope materials are saturated, strong ground motions could also trigger mudslides and mudflows. Properly designed engineered slopes will generally perform well during an earthquake.

Storm-Induced Landsliding and Erosion: Heavy rainfall often triggers surficial sliding (debris flows and mudflows) along the sides of canyons and on steep slopes. Hill slopes composed of Puente Formation blanketed with topsoil and colluvium are susceptible to erosion if not properly planted.

The current Unified Building Code (UBC) provides guidelines that may reduce the potential for mudflows and erosion, including provisions for planted and maintained slopes, retaining walls, drainage devices, and debris basins. Older hillside areas of the city developed prior to implementation of the current UBC may not have benefitted from such protection, and consequently could stand a greater likelihood of experiencing storm damage.

Subsidence from Groundwater Withdrawal: Ground subsidence resulting from groundwater extraction has been documented at several locations in California, including the Chino-Riverside, Bunker-Hill Yucaipa, and Temecula areas (Lofgren, 1971; County of San Bernardino, 1991; Shlemon and Hakakian, 1992). Subsidence in these regions has typically occurred over broad areas where groundwater levels have declined as much as 150 feet over a period of several tens of years. Ground subsidence generally occurs where deep alluvial valleys exist. Alluvium-filled canyons in the Chino Hills area generally contain less than 200 feet of alluvium overlying consolidated bedrock of the Puente Formation. Therefore, subsidence due to groundwater withdrawal is not anticipated to occur in Chino Hills (Lofgren, 1971).

Collapse and Expansive Soils: Soils can collapse or expand for a variety of reasons, including the type of soil or presence of water. Low-density soils, such as recently deposited river sediments, can settle if subject to the heavy loads associated with building foundations. These soils may also settle or compact during an earthquake when, as a result of strong ground shaking, water is extruded from the soil and the particles are compressed together.

Granular soils, such as sands and gravel held together by clay or another water-soluble binder, can compact or densify if the clay is washed away by infiltrating water. This process is called hydrocompaction. The change in volume that results when soils densify can cause extensive damage to building foundations, infrastructure (such as roads, bridges, etc.), and utilities. Therefore, potentially compressible soils need to be identified during the preliminary geological investigations for a proposed project or development so that mitigation measures can be selected and applied. The sandy alluvial deposits located within the major drainages traversing the city of Chino Hills may be susceptible to consolidation and hydrocompaction (Leighton and Associates, 1980; 1983a; 1984a; 1984b; 1990). Bedrock of the Puente Formation has a low settlement potential.

Soil settlement can also occur in the area on the eastern side of the city where clay was previously mined. If the open pits left behind from the clay mining operation are backfilled with fill that is not compacted under the supervision of a soils engineer, settlement could occur.

Expansive soils are soils with a significant amount of montmorillonitic clay, a mineral that has the ability to give up water (shrink), and take on water (swell) (Mathewson, 1981). When changes in the environment result in a change in the moisture content of these clays, the soils change volume. Changes in the volume of these soils can be brought about by seasonal changes in rainfall. Vegetation, especially large trees planted near a foundation, can also cause significant changes in soil volume as the trees withdraw water from the surrounding soil. Poor drainage around a structure can also result in localized swelling. The change in soil volume brought about by these processes can cause extensive damage to structures built over these soils. Differential expansion or settlement along the edges of a building foundation can also cause extensive structural damage. In the United States, expansive soils cause more damage in dollars to highways, streets, and buildings than other natu-

ral disasters, such as earthquakes, floods, and tornadoes, combined (Mathewson, 1981).

Most surface soils in Chino Hills have a moderate to low shrink-swell potential (Woodruff and Brock, 1980). However, some soils formed in place from weathering of clay-rich units of the Puente Formation have a high shrink-swell potential. The distribution of these surface soils in the city is shown on Figure S-5. The Puente Formation locally contains layers of volcanic ash that weather to highly expansive clays. These ash layers could be exposed during grading. To mitigate the hazards posed by soils with a high shrink-swell potential, geotechnical studies should be conducted on a lot by lot basis to evaluate the expansion potential of the soils at or near proposed grade.

Reactive Soils: Reactive or corrosive soils have chemical properties that can disintegrate or corrode metal pipes and concrete. Corrosive soils include soils with either low (less than 3) or high (greater than 9) pH values and low resistivity, and soils rich in sulfates. Soils with high concentrations of sodium, magnesium, or calcium sulfate can react chemically with the hydrated lime in cement, and disintegrate permeable concretes that have a high water-to-cement ratio. Soil engineers routinely conduct sulfate analyses of soils as part of geotechnical investigations. The impact of sulfate-rich soils on concrete can be mitigated by using special cement mixes that include additives to reduce the permeability of the concrete, and by paying careful attention to the mix design, quality control, and curing of the concrete. Soils in Chino Hills area generally are noncorrosive and contain negligible amounts of sulfate (Leighton and Associates, 1980). The city currently (1993) requires a soil analysis for corrosion prior to installation of water lines, sewer mains, or storm drains. Special design and materials must be used where corrosive soils exist.

Issues and Opportunities - Geologic Hazards

This section summarizes principal issues and offers suggestions for future actions:

1. Geologic hazards in the city of Chino Hills are controlled to a large extent by the types of rock that underlie the area. Bedrock of the Puente Formation crops out in most of the hilly portions of the city. This formation has units within it that are characteristically weak and therefore prone to landsliding. Four landslide susceptibility zones have been identified within city limits.
2. Most of the landslides mapped in the city are at present in equilibrium with the environment. However, these landslides could be reactivated as a result of any natural or man-made processes, such as development of the hillsides, earthquake-induced strong ground motion, and periods of intense rainfall.
3. Development projects that involve grading of hillsides should be planned so as to disturb the natural landforms as little as possible. It is City and County policy to control the overall shape, height, and grade of cut and fill slopes so that manufactured landforms are in concert with existing natural contours while preventing conditions that result in landsliding, run-off, or erosion.
4. Good grading design must balance safety and aesthetics to preserve the natural visual quality and community character. Mitigation of existing and/or potential slope problems at the site and tract level should be recommended by qualified geotechnical engineers, engineering geologists, and contractors, and should be based on detailed site-specific information and current grading codes.

5. Hillside management guidelines must provide for implementation along entire slope segments. To benefit from contour grading, slope cover, and irrigation and drainage/debris protection regulations, these guidelines must be applied across several properties adjoining a single slope segment. Designation of Geologic Hazard Abatement Districts (GHAD) is one alternative for developing a comprehensive hillside plan along slope segments adjoining canyons and other hillsides in already developed villages.

6. Potentially active landslides and even engineered slopes can be destabilized by excessive water. Clay beds within the Puente Formation may be prone to slippage if excessive water is introduced into either an engineered slope or a natural landslide mass. To reduce the potential for activation or reactivation to occur, the introduction of water through landscaping or sewage septic systems must be minimized. This is especially true in areas underlain by either small landslides or deep-seated landslides that were too large to have been mitigated during smaller grading projects.

7. Expansive soils can occur locally in the city of Chino Hills. Homeowners can control the potential damage that expansive soils can cause to their houses by maintaining or improving drainage in their lots, installing gutters, and properly landscaping their properties. Homeowners should be encouraged to plant drought-resistant plants around the perimeter of their houses, including replacing water-thirsty plants such as trees with more drought-tolerant varieties.

8. Recently deposited alluvial sediments in canyon bottoms in the city may be susceptible to settlement. Artificial fill placed without the supervision of a soils engineer and not compacted to an adequate density can also settle if subjected to heavy loads, or as a result of strong ground shaking during an earthquake. These soils should be identified during preliminary geological investigations for a

proposed development. In most cases, settlement of these soils can be mitigated by removing and recompacting the settlement-prone soil materials.

9. Natural slopes are highly vulnerable to shallow soil slippage due to saturation from heavy rains. It is vital for property owners at the top of the slope to control their lots' surface drainage and not allow runoff water to flow over the slope face. Area drains should not be piped to the slope face.

Flood and Inundation Hazards

Government Code Section 65302(g) requires local governments to assess the potential impact that failure of a dam or other water retention structures may pose to the community. The Safety Element must also assess the impact of flooding from storm activity, such as 100-year and 500-year floods. A 100-year flood event is that flood with a probability of occurring once every 100 years, or that has a 1/100 chance of occurring in any one year. The potential damage posed by more frequent, smaller-scale floods that occur when storm drain systems become overburdened during strong winter storms is also addressed. These floods can damage property and hinder emergency response activities, such as evacuation and fire department access to fire hydrants.

Storm Flooding: Most rainfall in the Chino Hills area, as in the rest of Southern California, occurs in the winter months between December and March. Runoff from the city generally drains east and south, toward Chino Creek and Prado Flood Control Basin, and on to the Santa Ana River Basin. Canyons on the west side of the city, including Tonner Canyon, Carbon Canyon, Soquel Canyon, and Aliso Canyon, drain westward toward Los Angeles and Orange counties. With the exception of Tonner Canyon, which drains into the San Gabriel River watershed, the remaining canyons drain into lower reaches of the Santa Ana River Basin. All the canyons in the city are prone to seasonal flooding.

Localized flooding has occurred historically in the Chino Hills area, generally because drainage facilities are too small to convey the storm flows generated from increased urbanization and paved surfaces in the area. Severe erosion along many natural channels, and debris-clogged drainages, compound the problem. Localized flooding has been known to occur in some areas of the city, notably the lowlands bounded by Pipeline, Eucalyptus, and Merrill avenues and the Chino Creek Channel, and the section of Peyton Road between Eucalyptus Avenue and Carbon Canyon Road (Chino Hills Specific Plan, 1990 amendment). Sheet flooding has also occurred in the Los Serranos area north of the golf course and along portions of English Road.

Portions of what is now the city of Chino Hills were mapped in the 1980s by the Federal Insurance Administration (FIA) as part of its National Flood Insurance Program. Most of the area mapped was designated Zones C and D on the Flood Insurance Rate Maps (National Flood Insurance Program, 1981; 1989). Zone C covers those areas of minimal flooding. Zone D is identified as an area of undefined, but possible, flood hazards. Areas on both sides of Carbon Canyon Creek and Little Chino Creek have been classified into Zones A and B. Zone A is the 100-year flood plain. In Chino Hills, those portions of Zone A where the base flood elevations and flood hazard factors have been determined were subdivided into Zones A4 and A5. Zone B is defined as the area falling between the limits of a 100-year and 500-year flood; or certain areas subject to 100-year flooding with average depths less than one foot or where the contributing drainage area is less than one square mile; or areas protected by levees from the base flood. The basic flood Zones A, B, C, and D mapped in the Chino Hills area are shown on Figure S-6. For a more detailed breakdown of the areas in the city within Zone A, where the base flood elevations have been determined, the Flood Insurance Rate Maps for Chino Hills should be consulted.

Storm Drain System: Drainage facilities in Chino Hills include a series of concrete-lined and improved unlined channels, concrete culverts, and several detention and debris basins. The storm drain facilities in the east side of the city drain into the Chino Creek Channel, a concrete channel along Chino Creek constructed by the Corps of Engineers in 1960. This channel is maintained by the San Bernardino County Flood Control and Water Conservation District. The County also maintains the main storm channels in the city along English Road and Little Chino Creek; the channel that extends east and southeast from Los Serranos Lake to Chino Creek; and the lined channel that extends from the southern end of Pipeline Avenue east toward the Chino Valley Freeway (State Highway 71), and then southeast along the Expressway. The City maintains the remaining storm drain facilities (P. Chinn, City of Chino Hills, personal communication, 1993).

Storm drainage requirements are generally designed to prevent floods from rising above the curbline and beyond the right-of-way. Although curbline inundation is generally not a direct threat to public safety and only poses an inconvenience to motorists and pedestrians, in an emergency, street circulation could be vital. In addition, if access to a fire hydrant is hindered by street inundation, fire fighting capability can be indirectly affected. Most storm drains in the city were designed to convey 25-year frequency storm flows (floods that are expected to be equaled or exceeded once every 25 years). A few storm drains adjacent to the Chino Valley Freeway were designed by Caltrans to convey a 10-year storm (P. Chinn, city of Chino Hills, personal communication, 1993). As discussed above, some of these storm drains may now be too small to convey the flows originally designed for. The drainage system in the city should be evaluated to identify and correct those drainage facilities that are not adequately sized to handle present and expected future flows. Storm drains that are clogged with debris during a flood event have a high potential for causing damage due to erosion and rechannelization of the floodwaters.

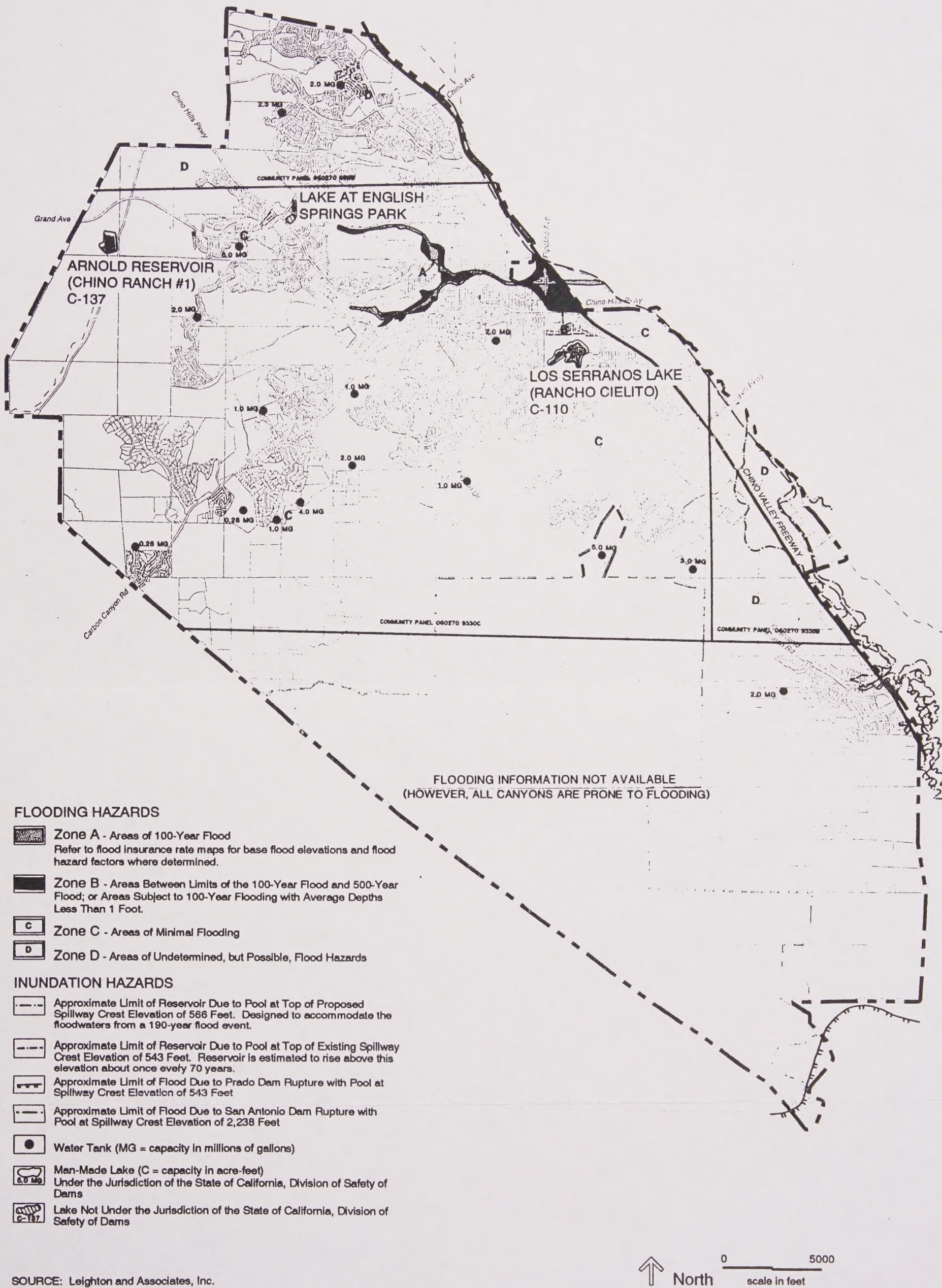


Figure S-6
Flooding and Inundation Hazards

Private Drainage: Many of the soils in the Chino Hills area have a high erosion potential. Erosion is not only unsightly, but can make adjacent slopes unstable. This emphasizes the importance of installing and maintaining adequate drainage devices on developed hillside lots (refer to the section on Geologic Hazards). Channeling drainage away from slopes to maintained storm drains prevents erosion and minimizes the chance of shallow mudflows on graded slopes.

Private owners should also inspect their drains and remove any debris on a regular basis. This prevents private drain systems from clogging and overflowing, channeling water and/or mud downslope, and potentially damaging adjacent residences. Residential drainages often tie into the larger storm drain system where they are emptied into natural drainages such as canyon areas. Paved concrete channels or flood velocity reduction structures are sometimes necessary in natural drainages to prevent erosion caused by the channeled runoff.

Significant hillside erosion can also occur following a wildland fire. Debris-laden floods emanating from recently burned slopes during the early winter rains can result in large amounts of sediment deposited in the channels draining the area. To mitigate this hazard, runoff from unimproved areas should be controlled and channeled to adequate drainage facilities. Slopes can be protected from erosion by covering them with drought-resistant vegetation. Other erosion control measures that can be used to control slope erosion include rip-rap, gabions, and concrete lining. Locating homes in the flow path of hillside gullies or swales should be prohibited unless adequate provision for drainage and debris protection is designed into the project.

Seismically Induced Inundation: Seismically induced inundation refers to flooding as a result of water retention structures failing during an earthquake. There are two reservoirs within city limits (Arnold Reservoir and Los Serranos Lake) and two other reservoirs adjacent to or upstream from Chino Hills that could fail during an earthquake. In addition, culverts, levees, stock ponds, and other flood

control works may crack and suffer some structural damage during an earthquake especially in areas susceptible to ground failure. These facilities could pose an inundation hazard if they contain water at the time of the seismic event, or if they are not repaired soon after an earthquake and prior to the next wet season.

Dam Inundation: Under authority of California Government Code Section 8589.5, every reservoir owner is required to develop and maintain an emergency plan to be implemented if the dam is catastrophically breached. Each dam-specific emergency plan includes a map that shows the potential limits of the flood that would result if the reservoir failed while filled to capacity. These flooding maps are a worst-case scenario, since most reservoirs and flood control structures in Southern California are rarely filled to capacity. In addition, reservoir owners are required to regularly inspect their dams for safety under supervision from the Department of Water Resources, Division of Safety of Dams. The possibility of inundation in the event of a catastrophic dam failure is therefore remote. There are two small dams within Chino Hills - Los Serranos Lake (also known as Rancho Cielito Reservoir) and Chino Ranch No. 1 Dam (or Arnold Reservoir) which could cause localized flooding if damaged. The lowlands in the city could be impacted if San Antonio Dam (located in San Antonio Canyon within the San Gabriel Mountains, about 10 miles north of the city) failed while filled to capacity. A small portion of the city along its southeastern border would also be flooded if Prado Dam, located southeast of the city, failed catastrophically while full. Each of these reservoirs is discussed in more detail below.

- Los Serranos Lake (or Rancho Cielito Reservoir) is an earthen dam located in the Los Serranos area. The dam was reportedly built in the 1880s (J. Greening, personal communication, 1993), although the Department of Water Resources (1988) lists it as having been completed in 1912. The nine-foot-high dam was built to store well water that was used for agricultural purposes. The

reservoir has a storage capacity of 110 acre-feet (acre-foot is a measure of volume equal to one acre of land covered with water to one foot depth) and a dam crest elevation of 644.6 feet above Mean Sea Level (MSL) (Department of Water Resources, 1988). According to Mr. J. Greening, the dam owner, water in the reservoir is generally kept to within three feet of the dam crest. The stored water has been used in the past to irrigate the golf course in the Los Serranos Country Club. The dam is inspected yearly by the Division of Safety of Dams. At present, an inundation map for this dam has not been prepared. In the event of dam rupture, the area downgradient from the dam with an elevation below about 642 feet MSL could be inundated. Inundation waters would probably flow east to southeastward toward Chino Valley Freeway, where water would pond behind the freeway, and flow southward to the closest storm drain. Ultimately, floodwaters would flow into Chino Creek and the Prado Dam Flood Control Basin.

- Arnold Reservoir is the body of water behind the Chino Ranch No. 1 Dam. This dam is located in Tonner Canyon, in the northwest corner of the city. The 22-foot-high dam was completed in 1918 with a crest elevation of 959.5 feet and a design storage capacity of 137 acre-feet (Department of Water Resources, 1988). The dam is operated by the City of Industry Urban Development Agency, and the impounded water is used for cattle. In the event of dam rupture, presently undeveloped portions of Tonner Canyon would be inundated.
- Prado Dam is a concrete-covered, earthen flood control dam on the Santa Ana River located southeast of and downgradient from Chino Hills. The 106-foot-high dam was completed in 1941 with a crest elevation of 566 feet MSL and a reservoir storage capacity of 314,375 acre-feet. Because of extensive development both upstream and downstream from the dam, it has been estimated that water in the reservoir would rise above the present

spillway elevation of 543 feet about once every 70 years (Department of Water Resources, 1980). The limits of the existing Prado Dam floodplain in the city, at an elevation below 543 feet MSL, are shown on Figure S-6.

Under the Santa Ana River Main Stem Project, the U.S. Army Corps of Engineers (COE) has approved a plan to raise the dam crest elevation from the present 566 feet to 594.4 feet. This project is not likely to be completed before 1998, as the COE is planning to finish the Seven Oaks Dam project in the upper reaches of the Santa Ana River, near Redlands, before making these proposed improvements to Prado Dam (B. Tracy, personal communication, 1993). The new design elevation would accommodate the floodwaters from a 190-year flood event, which the COE calls the Maximum Probable Flood (MPF). The new spillway elevation would be at 563 feet, with an additional three feet allowed for freeboard (the vertical distance between the crest of the spillway and the reservoir water surface). The COE is presently establishing a flood flowage easement at the 566-foot elevation. In the remote chance that the reservoir filled to its new proposed capacity, the eastern portions of the city at an elevation below 566 feet would be flooded. This would affect the lowland areas south of Los Serranos Road and developed areas in Butterfield Ranch.

If Prado Dam were breached while filled to capacity, floodwaters would reach the extreme southeastern portion of the city, about 2,000 feet southwest of the dam, in 15 minutes. The peak flood elevation of 480 feet would occur about 1.75 hours after the dam were breached, with an average over bank depth of 15 feet (U.S. Army Corps of Engineers, 1985). The flood inundation limits in the city of Chino Hills as a result of Prado Dam failing are shown on Figure S-6.

- San Antonio Dam is an earthen flood control dam on San Antonio Creek located approximately 10 miles northeast and

upgradient from the northeastern portions of Chino Hills. The 160-foot-high dam was completed in 1956 with a crest elevation of 2,260 feet MSL and a design storage capacity of 7,703 acre-feet (Department of Water Resources, 1988). According to the COE (1986), in the unlikely event that this dam failed while filled to capacity, the flood waters would be contained within Chino Creek. Floodwaters would reach the intersection of Ramona Avenue and the Chino Valley Freeway (State Highway 71), 10.8 miles downstream from the dam, within 7.5 hours after the dam failed. The peak flood, with an estimated elevation of 704 feet, would reach this same intersection about nine hours after the dam failed, flooding the area under about two feet of water (U.S. Army Corps of Engineers, 1986). Floodwaters would reach the intersection of the Riverside-San Bernardino County line and the Chino Valley Freeway (State Highway 71), approximately 15.7 miles downstream from the dam, within 12.5 hours. A peak flood elevation of 543 feet would occur 14.5 hours after failure, with an average over bank depth of 41 feet (U.S. Army Corps of Engineers, 1986). The estimated over-bank depth of 41 feet at this location would be the result of floodwaters ponding behind Prado Dam.

Seiches: Seismically induced flooding can also occur as a result of seiching. Strong ground motion generated by an earthquake may trigger waves, or seiches, in enclosed or semi-enclosed bodies of water, such as lakes, reservoirs, and harbors. If these earthquake-induced waves are high enough, some water may flow over the top of the dam, causing localized flooding next to and downslope from the reservoir. Seiches could occur in both Los Serranos Lake and Arnold Reservoir during an earthquake. Several small reservoirs or ponds used for stock water, wildlife management, and natural habitat preservation are located in Chino Hills through Aliso Canyon, Bane Canyon, Water Canyon, and Brush Canyon watersheds (Department of Parks and Recreation, 1986).

In addition, there are several small man-made lakes or ponds that are used for landscaping and recreation purposes. These ponds may be susceptible to seiching, with resultant small-scale, localized flooding if the structures contain water at the time of an earthquake.

Tank Reservoirs: As indicated on the City of Chino Hills Water Facilities Plan, dated February 3, 1993, there are currently 16 water tanks in the city used to store water for domestic purposes. These tanks vary in storage capacity from between 0.25 and 5 million gallons. The City is planning to build nine additional tanks with capacities between 2 and 5 million gallons. Seven of these existing and planned tanks are or will be located near the Chino Fault Hazard Zone. If a moderate to strong earthquake occurred on the Chino fault, these tanks could be damaged, releasing their stored waters and flooding adjacent developments located downslope. This happened during the Landers Earthquake of June 1992, when an aboveground water tank owned by the Antelope Valley Water District was damaged. The tank was located within 500 feet of the ruptured fault, and the strong ground motions generated by the earthquake caused the water inside the tank to slosh back and forth with great force. The sloshing lifted the water tank off its foundation, buckled the base of the tank, and sheared off the pipes that attached to the tank. Water drained out of the tank in a matter of a few minutes, flooding the area downslope.

Aboveground storage tanks should be adequately founded and baffled to reduce the impact of earthquake-induced structural damage. Water tanks should remain operational after an earthquake because the stored water may be necessary to suppress earthquake-induced fires that may occur in the city. Residents may also have to depend on water stored in these reservoirs if the pipes used to bring water into the city are damaged.

Issues and Opportunities - Flood and Inundation Hazards

1. A 100-year and 500-year flood zone has been designated in portions of Little Chino Creek. Flooding in this area can impact traffic on portions of Pipeline, Eucalyptus and Merrill avenues, Carbon Canyon Road, Peyton Drive, and the Chino Valley Freeway (State Highway 71).
2. The potential flooding hazards identified in the 1980s in the Chino Hills area by the Federal Insurance Administration (FIA) may have to be re-evaluated. Drainage facilities in the city may be inadequate to convey runoff associated with the extensive urbanization that some portions of the city have experienced in the last decade. The City should file a request with the FIA to participate in the National Flood Insurance Program and have the city remapped for flood insurance purposes. Community participation in the National Flood Insurance Program allows homeowners to obtain flood insurance through their own insurance agent. The program covers any damage caused by "flash flood", "mudflow", or "earth movement" directly related to heavy rainfall/seasonal conditions, including shallow flooding in streets and residences associated with inadequate storm drainage.
3. New development or expansion of existing development adjacent to canyons increases runoff and erosion. Increased erosion of hillsides, with consequent sedimentation along natural drainages generally occurs after wildland fires. Erosion control measures, including planting of drought-resistant, fire-retardant vegetation, can be used to reduce this hazard. Environmental damage and, in some areas, slope instability, may result. Environmental impact reports must address the potential impact that development may pose on canyon drainages. Provisions should be defined to finance the installation of adequate connectors to the existing storm drain system, and to improve the existing drainage system to accommodate the increased storm flows generated by increased urbanization.
4. Proper drainage is necessary to ensure adequate access or regress for emergency response, fire fighting, or evacuation activities. The City should encourage correction of sheet flow or concentrated channel flow problems along existing single access routes or in areas where the existing drainage devices are inadequate.
5. Protection of homes from the threat of upslope generated debris flows should be mandated for all new developments, and encouraged for all existing structures through community education and awareness.
6. Seismically induced flooding poses a potential hazard to portions of the city of Chino Hills. If the dam forming Los Serranos Lake failed during an earthquake, the water released would flood those areas to the east and southeast of the lake at elevations below 642 feet above mean sea level. Failure of the dam impounding Arnold Reservoir would result in flooding along the presently undeveloped Tonner Canyon. The lowlands in the eastern side of the city could be flooded if San Antonio Dam failed during an earthquake. If Prado Dam failed during an earthquake, the southeastern corner of the city could also be flooded.
7. Localized, seismically induced flooding could also occur if an earthquake generates seiches in Los Serranos Lake or Arnold Reservoir. Sloshing water can also damage many of the water tanks in the city if these are not adequately tied to their foundations and internally baffled. (The majority of the tanks in the city satisfy these requirements and are built to American Waterworks Association guidelines.) Development downslope from these water tanks could be flooded if water is released during an earthquake.

8. The U. S. Army Corps of Engineers is planning to raise the dam crest elevation of Prado Dam. If the reservoir filled to the proposed new floodplain elevation, the eastern portions of the city at elevations below 566 feet could flooded. The COE is presently establishing a flood flowage easement at the 566-foot elevation. Improvement of the Prado Flood Control Basin is not expected to occur prior to 1998.

Fire Hazards

This section focuses on urban, brush and earthquake-related fire potential, as well as fire prevention standards employed in the city. The threat of earthquake-induced fire is discussed because widespread fires following an earthquake, if combined with Santa Ana wind conditions, could constitute a worst-case fire suppression scenario. A large earthquake in the area has the potential of very quickly taxing the available fire suppression resources as fire department personnel provide rescue, emergency medical, and evacuation services.

Fire Suppression Capabilities: The City contracts with the Chino Valley Independent Fire District (CVIFD) for fire suppression, fire prevention, and paramedic services.

The Chino Valley Independent Fire District presently operates three fire stations in Chino Hills, and three more in the city of Chino. The three stations in Chino Hills are located at 4040 Eucalyptus Avenue, 16231 Canon Lane, and 13707 Peyton Avenue, respectively. With complete implementation of the Fire Protection Master Management Plan, Fire District personnel can respond, on average, to most emergencies in about five minutes. Table S-4 shows the equipment and personnel assigned to each fire station. The Fire District is proposing to relocate the station on Eucalyptus Avenue to a site on or near the extension of Ramona Avenue. The new station would serve the industrial zone proposed around Ramona Avenue, and the Butterfield Ranch development. In addition, two new fire stations are proposed for con-

struction in Chino Hills. The first of these stations would be located near the intersection of Chino Hills Parkway and Eucalyptus Avenue; the second on Woodview Road, west of Peyton Avenue (Chino Valley Independent Fire District, Master Management Plan, 1993 Draft). Also, a third fire station will be needed, off Grand Avenue near the city of Diamond Bar, if this area is developed (R. Shackelford, CVIFD, written communication, 1993).

The engine companies in Stations 2 and 4 are each staffed with three persons every twenty-four-hour shift. In Station 6, nine persons are assigned to each twenty-four-hour shift to staff one engine company, one truck company, one paramedic rescue squad, and one Battalion Chief.

The CVIFD has mutual aid agreements with the West End Fire Departments, the Los Angeles County Fire Department, and the California Department of Forestry. The CVIFD also participates in the State Master Mutual Aid System (R. Shackelford, CVIFD, written communication, 1993). The California Department of Forestry augments fire protection services in the wildland areas that lie within the State Responsibility Area, such as Chino Hills State Park.

Safety Standards:

- Minimum safety standards for fire flow and water supply, road width and access, and turning radius for fire vehicles are required to ensure public safety and to maintain an adequate level of fire protection. The Insurance Services Office, Inc. (ISO) rates fire protection capabilities at the community level for insurance purposes. The ISO classification scheme is based on the distance to, and number of, responding fire stations in the community, the average response time, and hydrant spacing. Classification numbers are scaled from 1 to 10, with 1 being the highest rating. In general, those properties located five road miles or less from a responding fire station and within 1,000 feet of a hydrant as 4. The properties

Table S-4
Fire Suppression Services Presently Available
in the City of Chino Hills

Station No.	Address	Equipment	Personnel
2*	4040 Eucalyptus Avenue	1 Fire Engine 1 4x4 Patrol	<u>Engine Company</u> 3 Captains - 1 per shift 3 Engineers - 1 per shift 3 Fire Fighters - 1 per shift
4	16231 Canon Lane	1 Fire Engine 1 4x4 Patrol	<u>Engine Company</u> 3 Captains - 1 per shift 3 Engineers - 1 per shift 3 Fire Fighters - 1 per shift
6	13707 Peyton Avenue	1 Ladder Truck 1 Water Tender 1 Fire Engine 1 Squad Vehicle	<u>Engine Company</u> 3 Captains - 1 per shift 3 Engineers - 1 per shift 3 Fire Fighters - 1 per shift <u>Paramedic Squad</u> 6 Fire Fighters/Paramedics - 2 per shift <u>Truck Company</u> 3 Captains - 1 per shift 3 Engineers - 1 per shift 3 Fire Fighters - 1 per shift <u>Battalion Chief</u> 3 Battalion Chiefs - 1 per shift

*Proposed for Relocation

located five miles or less from a responding fire station but more than 1,000 feet from a fire hydrant, and properties located over five road miles but less than ten road miles from a responding fire station, are assigned a classification number of 9. ISO has assigned a split ranking of 4/9 to the Fire Protection District in San Bernardino County that covers Chino Hills (i.e., the Chino Valley Independent Fire District).

- Fire flow is the delivery rate of water necessary to halt and reverse the spread of fire. Fire flow requirements are determined based on the floor area in square feet, or fire area, of the building, and type of construction. The fire flow requirements contained in the 1988 Uniform Fire Code presently apply to all new development in Chino Hills. If adopted, the fire flow requirements of Appendix III-A of

the 1991 Uniform Fire Code will apply. The fire chief can modify these requirements if local conditions warrant a change in the Fire Code requirements. For example, in areas where there is an unusual susceptibility to group fires or conflagrations, the fire chief could require higher fire flows and flow durations than those established in the Code for that particular type of building construction and floor area.

Although the Uniform Fire Code is specific as to the fire flows and flow durations that should be available for fire fighting purposes, often the local water supply and distribution system is not capable of providing the recommended fire flows. The National Fire Protection Association (1988) recommends that fire hydrant flow tests be conducted regularly to identify deficiencies in the system, such as closed valves or clogged pipes, which need to be corrected to ensure adequate fire flows when needed. At present, fire hydrants in Chino Hills are not flow tested regularly (P. Chinn, City of Chino Hills, personal communication, 1993). The Fire District has identified some sections of the city -- notably, residential areas in Woodview (especially in high elevations), Los Serranos, and Carbon Canyon -- where fire flow capabilities are deficient due to inadequate line sizes, excessive fire hydrant spacing and substandard fire hydrant types (R. Shackelford, CVIFD, written communication, 1993).

Fire District personnel and equipment capabilities also effect the fire flows that can be delivered. Given current Fire District staffing levels, the amount of water that can be delivered is 250 gallons per minute per fire engine for an interior offensive attack. If all fire companies are used, a total fire flow of 1,500 gallons per minute can be provided. In addition, the Fire District can supply approximately 2,000 to 3,000 gallons per minute for an exterior defensive attack, for a total fire flow of 3,500 to 4,000 gallons per minute. These fire flow capabilities are for the best-case scenario, where all available personnel and equip-

ment are dedicated to suppressing the fire, and in an area of the city where the water distribution systems can provide these fire flows.

- Minimum road width, access, and turning radius standards are defined to permit adequate access to structures during fire suppression operations. Such standards are geared for private access roads including driveways, bridges, and alleys, and restricted access roads designed solely for fire department vehicle access. Minimum width of access roads are required by the Fire District as follows:
 - Fire access roads between development and open space - 20 feet;
 - Fire access roads through development to open space - 12 feet;
 - Private driveways - 20 feet;
 - Private roadways - 26 feet with parking restriction on one side, and 32 feet with no parking restrictions; and
 - Public roadways - County Road standards and Chino Hills Specific Plan requirements.

The minimum turning radius required by the Fire District is 40 feet. These requirements apply to new and proposed developments in the city rather than to older communities. At present some areas of the city are not readily accessible with fire suppression apparatus. These areas include apartment complexes and single-family residential zones that have narrow streets, and the community of Sleepy Hollow, which has very narrow street accesses and steep inclines. To improve accessibility to and maneuverability in these areas, the Fire District uses a short-wheel based fire engine and four-wheel-drive patrol vehicles.

- The Fire District requires that fire hydrants be located a maximum of 150 feet from structures for commercial applications and high density residential struc-

tures. This means that in commercial and high density residential areas, a maximum spacing of 300 feet between fire hydrants is allowed. In low density residential areas, the maximum allowable spacing is 600 feet.

Water Supply: The National Board of Fire Underwriters recommends that communities have a three-day supply of water that they can tap into in case of an emergency, such as an earthquake. Based on the water demand projections for the Chino Hills Specific Plan Area, by the year 1997, the average daily flow required for residential, commercial, public, and industrial uses will be 11.9 million gallons per day. This amount is projected to increase to 14.1 million gallons per day by the year 2002, and to 16.4 million gallons a day by 2012 (Chambers Group, 1989). Therefore, to have a three-day supply of water in case of an emergency, the City should be able to store a minimum of 36 million gallons of water by the year 1997, and 49 million gallons of water by 2012. The projected water demands for irrigating green belts and golf courses, and for construction projects, have not been included in the above daily flow requirements as these water uses are not essential to the health, safety, and welfare of the community.

The water distribution system presently consists of sixteen water tanks, several 24-, 20-, and 16-inch water mains, and a network of booster stations and smaller water distribution lines. These water tanks range in capacity from one-quarter of a million gallons to five million gallons, for a combined total of 33.8 million gallons. The City plans to build nine additional tanks that will be capable of storing about 28 million gallons of water. If most tanks in the city are kept at or near full capacity, the recommended three-day supply can be met with the existing and planned water tanks. However, these structures should be adequately braced and baffled to prevent the tanks from being damaged during an earthquake.

Potential losses in water pressure due to breaks in the water distribution system can be caused by corrosion of cast-iron pipelines,

damage to pipes during projects requiring excavation near utility lines, and earthquake-related ground failure. Old water mains in the city, especially in the Sleepy Hollow and Los Serranos areas, should be replaced in the near future. PVC and high-strength steel pipes can generally accommodate small deflections associated with ground failure and surface rupture better than cement or cast-iron pipes. The replacement water pipes should also be sized to provide adequate fire flows in these communities. Fire hydrants are flushed and maintained regularly by city crews.

Brush Fire: Open space and canyon areas in the city are covered with chaparral, coastal sage scrub, deciduous woodlands, and grasslands. Introduced vegetation includes landscaping plants and agricultural species. The chaparral and coastal sage plant communities are highly combustible due to the volatile oils contained in the plant tissues. Wildfires in the city pose a high threat to natural resources, structures, and human safety. The high risk posed by fires in the city is due to the combined effects of:

- climate (dry summers with Santa Ana wind conditions);
- steep, rugged terrain (limiting accessibility to fire-fighting vehicles and personnel);
- vegetation (highly flammable chaparral and similar plant communities that contain high concentrations of volatile oils); and
- development patterns (wildland and urban areas intermixed in the foothills and near canyon bottoms where development is located adjacent to highly flammable native vegetation).

Approximately 80 percent of Chino Hills is located within the City's designated Fire Safety Overlay District 1 (FS1, or Area 1), a very high to extreme fire hazard zone. A portion of the rest of the city is located in Fire Safety Overlay District (FS2, or Area 2). The limits of these Fire Safety Overlay Districts in Chino Hills are shown on Figure S-7.

As defined by the City's Development Code, Fire Safety Overlay District 1 includes wildland areas that are marginally developable, areas which are not likely to be developed, and the area of transition between wildland and areas that are partially developed or that are likely to be developed in the future. The transition area is often characterized by an abrupt change in slope. The natural ungraded slopes in Area 1 are often greater than 30 percent.

Fire Safety Overlay District 2 (FS2, Area 2) includes land that is relatively flat and is either partially or completely developed, or undeveloped and suitable for development. Present and future development in FS2 is exposed to the impacts of wildland fires due to its proximity to FS1.

The potential impact of wildland fires to development in FS2 cannot be understated. Even if a brush fire starts in an undeveloped canyon in FS1, "branding" of wind-transported embers up to a mile or more from the fire, especially during Santa Ana wind conditions, could ignite combustible roofs and awnings. Branding was responsible for extensive structural damage during the Carbon Canyon fire of June 1990. The residen-

tial fires that occurred in 1990 in Glendale and Santa Barbara, and in 1991 in Oakland, have also illustrated how branding, with consequent multiple ignitions, can tax normal fire fighting resources and lessen response times to individual fires. In an effort to mitigate the potential damage to structures as a result of branding, the City of Chino Hills Building and Safety Division enforces a Class A roofing ordinance in Fire Safety Review Area 1. Class A roofing materials approved by the Fire District include composite and ceramic tiles.

Based on data compiled in the last four years by the Chino Valley Independent Fire District, approximately 10 percent of the emergency calls that the District receives on a yearly basis are for fire suppression services. Of this 10 percent, about 20 percent were for structural fires, and 40 percent were for brush fires, in 1992 (see Table S-5). Vehicle fires make up a large proportion of the remaining percentage. The incidence of brush fires varies significantly from year to year, and is dependent on various factors, including amount of dry vegetation available for burn, percent air humidity, and whether Santa Ana wind conditions are present. Severe Santa Ana winds occur primarily in the spring and fall.

Table S-5
Emergency Calls for Fire Suppression
Chino Valley Independent Fire District

Year	% of Emergency Calls for Fire Suppression	% of Structural Fires	% of Brush Fires
1992	9.9	18.6	40.5
1991	10.6	20.3	19.4
1990	11.0	23.9*	19.3
1989	8.3	23.1	49.4

* Includes structural fires caused by the Carbon Canyon fire of June 1990.

Brush management of vegetation (fuel modification) adjacent to buildings is an important element of fire prevention. In the city, a landscaped and irrigated area between inhabited structures and grasslands is often used to reduce the potential for brush fires impacting developed areas. In these brush management areas, the City encourages the replacement of flammable native brush with mostly low-growing ground cover that has a high moisture content. Minimum requirements may include managing combustible growth within 100 feet of structures, including clearance of hazardous flammable vegetation for a distance of 30 to 100 feet around the building perimeter.

Aerojet Ordnance Facility: The potential for a wildland fire to originate at the Aerojet Ordnance Facility, located at the end of Woodview Road, should be considered since the ordnance reportedly sets fires and explosions within its compound as part of its operations (K. Gotch, City of Chino Hills, personal communication, 1993). However, the Aerojet Ordnance has an in-house fire department that includes a 45-person crew, three small fire trucks, one 2,000-gallon water tanker, and one bulldozer. The Aerojet's fire department is available to respond to an emergency on a 24-hour basis (L. Shiner, Aerojet Ordnance, personal communication, 1993). In addition, the facility can request assistance from the CVIFD and the California Department of Forestry. The CVIFD is the primary responding agency in the event of an uncontrolled fire occurring within the facility.

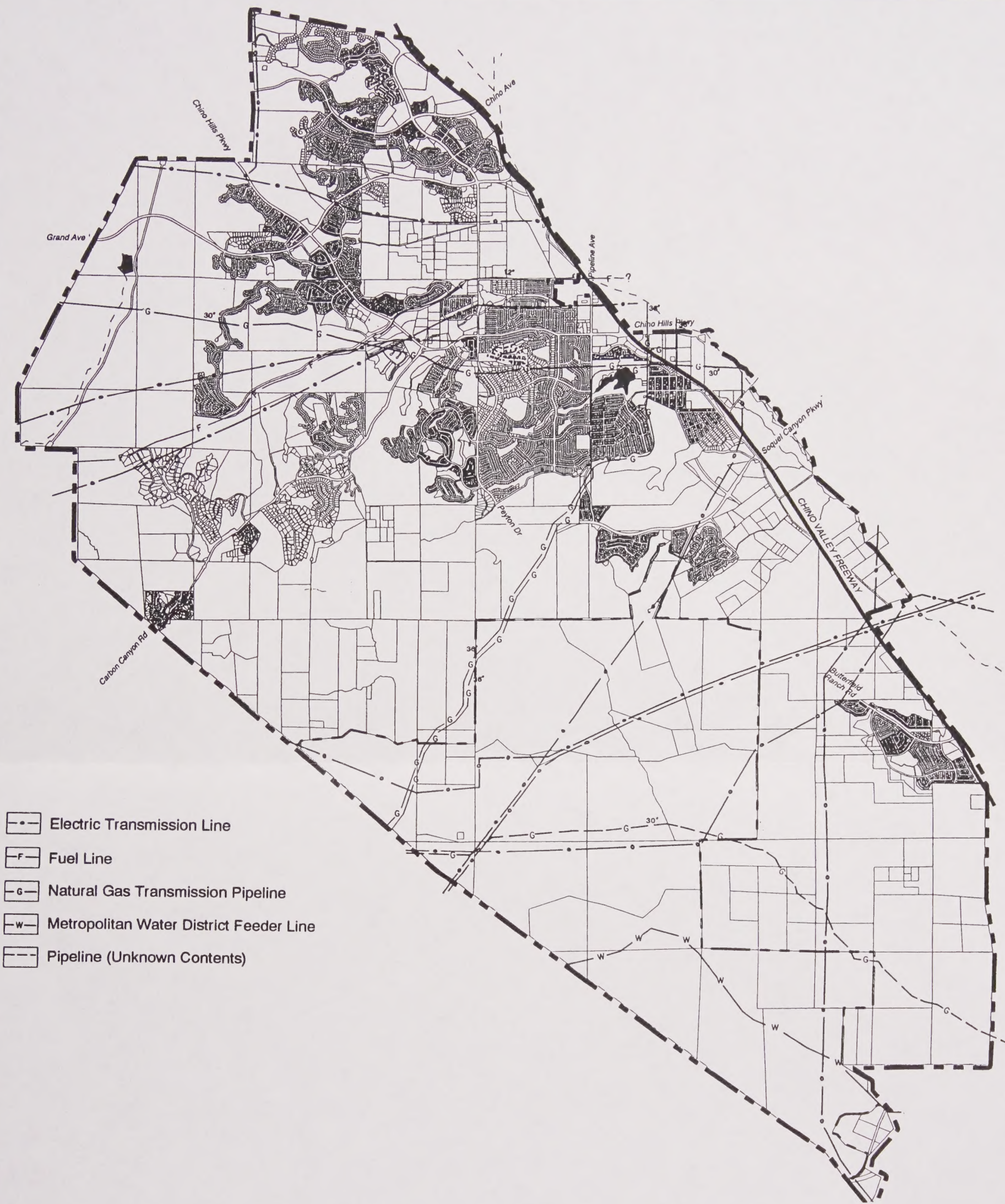
Earthquake-Induced Fire: The threat of earthquake-induced fire is emphasized because widespread fires following an earthquake, coupled with strong winds, constitute a worst-case fire suppression scenario. For example, most of the damage during the 1906 San Francisco earthquake was the result of fire. If underground water mains are damaged during an earthquake, the resultant lack of water pressure could compound the risk of fire. In addition, if several fires occur at about the same time, the local fire stations could be overwhelmed very quickly. The conscientious implementation of fire preven-

tion programs to reduce the hazard of earthquake-induced fire is the best solution.

The principal causes of earthquake-related fires include open flames, electrical malfunctions, natural gas leaks, and chemical spills. Commonly affected are unanchored gas heaters or gas-fired hot water heaters, which tend to tip over and damage rigid gas line connections during strong ground shaking. Given the residential setting of Chino Hills, damaged gas line connections, overturned appliances, and damaged electrical circuitry will be the most likely cause of earthquake-induced fires in the city.

Four high-pressure natural gas transmission pipelines operated by Southern California Gas Company extend across the city of Chino Hills (Figure S-8). Two of these pipes are 36 inches in diameter, and two are 30 inches in diameter. These pipes are fitted with automatically controlled valves so that, in the event of an emergency, the damaged section of pipe is shut-off immediately and the pressure is diverted around the break (C. Goalen, Southern California Gas Company, personal communication, 1993).

The natural gas distribution system, which includes the pipes that connect individual houses and structures to the street mains, is not fitted with automatic shut-off valves. However, all pipes in residential areas are controlled with a valve or series of valves. In the event of an emergency, the Southern California Gas Company can isolate the area by closing these valves. Once the gas has been turned off, crews can make any needed repairs to the lines. During the 1971 San Fernando Earthquake, four transmission pipelines owned by the Southern California Gas Company were damaged. This prompted the Gas Company to implement a major retrofit program of its facilities. Partly as a result of these efforts, during the 1987 Whittier Narrows Earthquake, there was no damage to transmission lines, and only one pipe in the distribution system failed (Seligson et al., 1990). Retrofit programs implemented included the replacement of older copper pipes with flexible polyethylene pipe for gas mains, and increased use of



SOURCE: Leighton and Associates, Inc.

↑ North
0 5000
scale in feet

Figure S-8
Major Utility Pipelines
and Transmission Lines



seismically designed devices, such as mechanical couplings and flexible connections for piping.

Southern California Gas Company (C. Goalen, Southern California Gas Company, personal communication, 1993) indicated that most pipes in Chino Hills are made of plastic and are relatively new. Therefore, the risk of uncontrolled fire from a damaged gas distribution supply system can be considered low in the city. The only segments of the system at risk would be those in areas of potentially severe ground failure and surface rupture, such as the eastern portion of the city near Los Serranos. As discussed, however, the Southern California Gas Company is able to isolate and shut off sections of severely damaged supply pipeline.

Damage to the city's water distribution system during an earthquake could result in insufficient water available for fire suppression. Since the water tanks are strategically located in the city, the Fire District may be able to obtain some of its water from these tanks. However, if the water feeder lines are damaged, the water tanks would be the only sources of potable water available to residents until the pipelines are repaired. Additional water sources that the Fire District could tap into for fire suppression include Los Serranos Lake and Arnold Reservoir, as well as the several small stockponds and recreational lakes located throughout the city. Swimming pools in residential complexes can also be used as water sources if necessary. Portable, gasoline-powered pumps should be available to the Fire District to pump water from these sources during an emergency.

Downed power lines from an earthquake and strong winds can also start brush fires. To prevent such an occurrence, power lines are designed to automatically deenergize if there is a break in the system. Keeping vegetation cleared from under transmission routes can also help to reduce the risk of fire.

Issues and Opportunities - Fire Hazards

1. The Chino Valley Independent Fire District inspects all commercial structures on a yearly basis for conformance to the City-mandated Building and Fire Codes. At present, each of the jurisdictions served by the Fire District follows a different Fire Code; the City of Chino Hills is still using the 1988 Uniform Fire Code, although the 1991 Fire Code with local amendments is being considered for adoption. Immediate adoption of the most current Fire Code by all three jurisdictions (City of Chino Hills, City of Chino, and San Bernardino County) would streamline the Fire District's operations.
2. The Fire District conducts annual fire prevention and brush inspections in the Carbon Canyon area. Continued emphasis on public awareness and education concerning brush and earthquake-induced fire during such inspections is warranted. Advocation of smoke alarms, fire sprinklers, and other fire protection and/or risk reduction devices is also appropriate.
3. Supplementary gravity-fed municipal water tanks and distribution systems and fire flow testing are necessary elements of an emergency fire flow program. Some portions of the water distribution system in the city are not capable of providing recommended fire flows. These areas include Woodview and Los Serranos. Water pipes in these areas should be replaced with adequately sized, more earthquake-resistant piping.
4. The water tanks in the city are generally sufficient to store a three-day supply of water in the event of an earthquake. However, these sources may be insufficient if this water is also needed for fire suppression. Secondary water supply systems available to supplement these water tanks include Arnold Reservoir, Lake Los Serranos, many of the stockponds and recreational lakes located throughout the city, and swimming pools

in residential areas. The City or the Fire District could store and maintain several portable emergency generators to pump water out of these lakes and swimming pools in the event of an emergency. In addition, the city can obtain emergency water supplies from its water connections with the cities of Chino and Pomona and Monte Vista Water District.

5. A large portion of Chino Hills is located within the city's Fire Safety Overlay District (FS1), a very high to extreme fire hazard zone. The potential for wildland fires to occur in this area can be reduced through extensive public education that highlights brush management techniques, and community-watch programs that target arsonists and children playing with matches and other ignitable materials. These mitigation measures can also reduce the potential for fires to ignite in Fire Safety Overlay District 1 as a result of branding.
6. Erosion can result from improper brush management. To manage fuel loading, and therefore reduce the hazard of wildland fires without increasing erosion, existing vegetation can be replaced with fire-retardant plants.
7. Public assembly facilities, high occupancy facilities, and facilities housing immobile populations (schools, day care and convalescent homes) require special emergency needs in addition to fire suppression. All schools and day care centers are inspected annually by the Fire District for compliance with California Code of Regulations Title 19. Intense fires can also ignite in department stores, commercial/industrial buildings, and exhibition halls and auditoriums. Fire drills and public education programs should be conducted regularly to facilitate rescue operations and fire containment.

Hazardous Materials

Hazardous material is a broad term for all substances that may be hazardous, including hazardous waste (San Bernardino Department of Environmental Health Services, 1991). The California Health and Safety Code defines a hazardous material as any material that because of its quantity, concentration, or physical or chemical characteristics, poses a significant potential hazard to human health and safety or to the environment if released into the work-place or environment.

The State of California (Title 22) further defines a hazardous material as a substance that exhibits any of the following properties:

- Toxic - capable of producing injury, illness, or damage to humans, domestic livestock, or wildlife through ingestion, inhalation, or absorption through any body surface;
- Ignitable/Flammable - capable of being set afire, or of bursting into flame spontaneously or by interaction with another substance or material, and/or capable of burning with great rapidity;
- Reactive - having properties of explosivity or of chemical activity which can be a hazard to human health or the environment; or
- Corrosive - having the ability to destroy living tissue or steel surfaces by chemical action.

An extremely hazardous material is defined by Title 22 as a substance that is:

- Acutely toxic - having the ability to cause injury, illness, or damage to humans, animals, or other living organisms by a single exposure of a duration measured in seconds, minutes, hours or days, or in the case of oral ingestion, by a single dose; or

- Chronically toxic - having the ability to cause injury, illness or damage to humans, animals or other living organisms by prolonged or repeated exposure or consumption over a period of days, weeks, months, or years; or
- Carcinogenic - capable of producing cancer; or
- Bioaccumulative - a toxic substance that concentrates in living organisms through direct assimilation or food chain accumulation; or
- Persistent in the environment - a toxic substance that resists natural degradation or detoxification; or
- Water reactive - having properties of explosivity or of violent chemical activity when in contact with water which can be a hazard to human health or the environment.

Releases of hazardous materials can occur during a natural disaster, such as during an earthquake. Improperly stored containers of hazardous substances may overturn or break, pipelines may rupture, and storage tanks may fail. Containers may also explode if subject to high temperatures, such as those generated by a fire. If two or more chemicals which are reactive come in contact as a result of a spill, the hazard may be compounded. The 1991 Uniform Fire Code includes a set of criteria designed to minimize the risk of an accident and to be followed when storing, using, or handling hazardous materials. These requirements include secondary containment of substances, segregation of chemicals to reduce reactivity during a release, sprinkler and alarm systems, monitoring, venting and auto shutoff equipment, and treatment requirements for toxic gas releases.

Examples of hazardous materials include oil, paints, thinners, cleaning solvents, compressed gas, radioactive materials, refined petroleum products, and pesticides.

Hazardous Materials Disclosure Program: All businesses that handle more than a specified amount of hazardous materials are required by both the federal and State governments to submit a business plan to their local administering agency. In the city of Chino Hills, the administering agency is the San Bernardino County Hazardous Materials Management Division (SBCHMMD). The current reportable quantities of hazardous materials are 55 or more gallons of a liquid, 500 pounds or more of a solid, or 200 cubic feet or more of a gas at standard temperature and pressure; quantities for extremely hazardous materials are less than the above listed amounts and vary according to the specific substance. Every handler is required to submit a business plan and an inventory of hazardous substances to SBCHMMD on a yearly basis. Registration forms for extremely hazardous materials are also to be submitted on a yearly basis (M. Kraft, SBCHMMD, personal communication, 1993).

Most chemicals used, and thousands of different chemicals are used everyday, have their own unique physical and chemical characteristics; what might be an acceptable mitigation procedure for one chemical may be totally inadequate for another. Therefore, business plans should contain, for each hazardous and extremely hazardous material handled, a description of the physical and chemical properties of the substance and the symptoms that may result from contact with the substance. This information is included on the Material Safety Data Sheet (MSDS) for each material. An MSDS is available from the manufacturer of the substance or material. The business plan should also include a site map that shows where each hazardous material is stored and handled, where emergency response equipment is located, and evacuation plans and procedures. Business plans are designed for use by the Fire District during a hazardous materials incident to allow for quick and accurate evaluation of each situation for appropriate response. Employees of facilities that use, store, or manufacture hazardous materials are required to know where a copy of the business plan is kept and how the plan is put into operation should a hazardous material incident occur.

Significant concentrations of hazardous materials, at levels for which a business plan is required, are generally associated with manufacturing and industrial areas. In the City of Chino Hills, there is currently few industrial uses. The Specific Plan, however, designates a large area east of Ramona Avenue for business park uses. Hazardous materials are also used and stored in commercial and residential areas. At present, most of Chino Hills is zoned for residential use. The few commercial areas in the city include grocery stores, retail clothing and specialty shops, banks, restaurants, gasoline stations, and other service businesses, such as printers and photographic development shops.

The SBCHMMD has field inspectors assigned by districts to all regulated facilities including hazardous waste generators, hazardous materials handlers, and UST operators (M. Kraft, SBCHMMD, personal communication, 1993). Staffing levels at the SBCHMMD generally dictate how often regulated facilities are inspected. However, it is the County's goal to inspect each facility once every two years. New underground storage tank systems are inspected three times during their construction (M. Kraft, SBCHMMD, personal communication, 1993). Inspections are also performed in response to complaints and requests for assistance. A periodic newsletter is issued by the SBCHMMD to keep regulated facilities up to date on issues and new requirements. A list of hazardous materials handlers and/or generators is maintained by the City.

Hazardous Materials Incidence Response: The City is currently in the process of developing an Emergency Management Plan (EMP), modeled after the EMPs from the City of Chino and San Bernardino County (K. Gotch, City of Chino Hills, personal communication, 1993). The document is tentatively scheduled for adoption in early 1994. While its ERP is developed, the City is using Chino's ERP.

In the event of a hazardous materials release within the city of Chino Hills, the Chino Valley Independent Fire District (CVIFD) is

normally the first agency to respond. The Fire District, through the West End Fire Departments' Hazardous Materials Joint Powers Authority, has a response vehicle and equipment to handle hazardous materials releases. Also, the Fire District staff includes State-certified hazardous materials technicians. The CVIFD is also responsible for coordinating the initial response and on-scene operations. The California Highway Patrol (CHP) will respond to spills that occur on freeways, with local Sheriff and police departments providing additional enforcement and routing assistance.

If necessary, the CVIFD can request assistance from San Bernardino County, Department of Environmental Health Services' Emergency Response Team. The County's Emergency Response Team has four hazardous materials squads; the squads are located in Fontana, Barstow, and San Bernardino (two squads). Following initial emergency response to a release, the County Department of Environmental Health Services will coordinate the clean-up of soil and groundwater that was affected by the hazardous materials release (M. Kraft, SBCHMMD, personal communication, 1993).

In the City of Chino Hills, all of the listed businesses that handle hazardous and/or extremely hazardous substances in quantities above the reportable limits are located within two miles of one of the three fire stations in the city. The short distance between the facilities that handle or generate hazardous materials and the three fire stations means that the Fire District can generally respond to a hazardous materials emergency at one of these sites within five minutes.

Other businesses and industrial facilities located outside Chino Hills have the potential of causing a hazardous materials release incident that may impact the city. These include multiple industrial facilities in the city of Chino located adjacent to and east of Chino Hills.

Special Concerns: Special concerns in Chino Hills include manufacturing businesses such as the Aerojet Ordnance, and other facilities

including a chlorination station, oil and gas wells, and high-pressure fuel oil and gas lines. Transportation-related incidents are also of concern.

Aerojet Ordnance: The Aerojet Ordnance facility located at the end of Woodview Road is a handler and generator of hazardous materials and has an emergency action plan filed with the County of San Bernardino. The facility is inspected once a year by the Fire District, the California Highway Patrol, and the Department of Transportation. In addition, yearly inspections are conducted by County, State, and federal agencies. A closure plan for the hazardous materials disposal operations at the facility has recently been prepared (Jaykim Engineers, Inc., 1993). The closure plan provides for the termination of all disposal of hazardous materials on site and the clean-up of hazardous materials that were previously disposed of on site. Upon approval of this plan, Aerojet will commence the closure and clean-up activities for the hazardous waste management units still present on site. Closure is anticipated to be completed in approximately six months after approval of the closure plan.

The ordnance facility has been in operation since 1954. Research and development operations have been conducted at the facility since the mid 1950s. In the 1970s it manufactured organic chemicals, high explosive incendiaries (HEI), and TNT. The manufacture of these chemicals and ammunition generated hazardous waste including HEI compounds, propellants, explosive-loaded components, containers and air filters contaminated with black powder, scrap primed cartridge cases, 25- and 30-mm projectile rejects, and explosive-contaminated paper cartons, rags, and gloves. These wastes were either collected in evaporation ponds or burnt. The evaporation ponds included two caustic ponds used to neutralize organic chemicals, one "redwater" pond (which probably refers to solvents containing nitrates used in the manufacture and/or cleaning of explosives), and one pond used for the evaporation of wastewater associated with the production of HEI. All four of these ponds

were closed in 1979. (Jaykim Engineering, Inc., 1993)

The other hazardous waste management units included an open detonation unit, two open burning pits, a popping oven (used to burn the primer from primed cartridge cases and destroy the detonator in bomb fuses), a trash incinerator, and a drop box (used to remotely detonate fuses). The permits to operate these facilities expired in November 1992, and Aerojet has chosen not to renew these permits. Most of these facilities were last used before November 1992. The closure plan also identified a 500-gallon above-ground waste oil tank used to store crank case oil and hydraulic fluids. This tank was removed in 1992. (Jaykim Engineers, Inc., 1993)

As part of the closure plan, Jaykim Engineers collected a limited number of water and soil samples collected from potentially contaminated areas and analyzed them in the laboratory for the presence of hazardous substances. With the exception of explosives, most of the hazardous substances detected in the samples were present in concentrations well below the levels of concern as established by the State of California. The data presented in the closure plan indicate that the potentially contaminated areas in the ordnance facility are relatively well-documented, and that over the years there has been relatively good control on how contaminants have been disposed of. Therefore, the potential for a release of contaminants that could impact city residents is considered low to none (Jaykim Engineers, Inc., 1993).

The most serious safety concern associated with the Aerojet Ordnance is transport of supplies and products along public roads. For this reason, the ordnance minimizes its use of roads through residential areas (L. Shiner, Aerojet Ordnance, personal communication, 1993). Munitions from the facility are transported by semi tractor/trailer east along Woodview Road to Pipeline Avenue, south to Soquel Canyon Parkway, and east to Pomona Rincon Road to the Chino Valley Freeway. Supplies destined for the Aerojet facility are also trucked in along this route. This route

passes through several residential areas in the city, although it is at present the shortest and safest route available to the Aerojet Ordinance to transport its products to and from the Chino Valley Freeway. No schools are located along this route.

Chlorination Station: The City of Chino Hills maintains and operates seven chlorination stations, and a chlorinator storage center. However, only one of the chlorination stations and the storage center are located within the city limits. The station is located north of Eucalyptus Avenue, west of the Chino Valley Freeway and the storage center on Eucalyptus Avenue. Another chlorination station is planned to be located on Carbon Canyon Road near Feldspar Drive. These facilities are potentially capable of producing a chlorine release if chlorine piping or tanks were to rupture in the event of an accident or due to strong seismic shaking. A chlorine release, especially if in gaseous form, could affect the area within vicinity of these facilities.

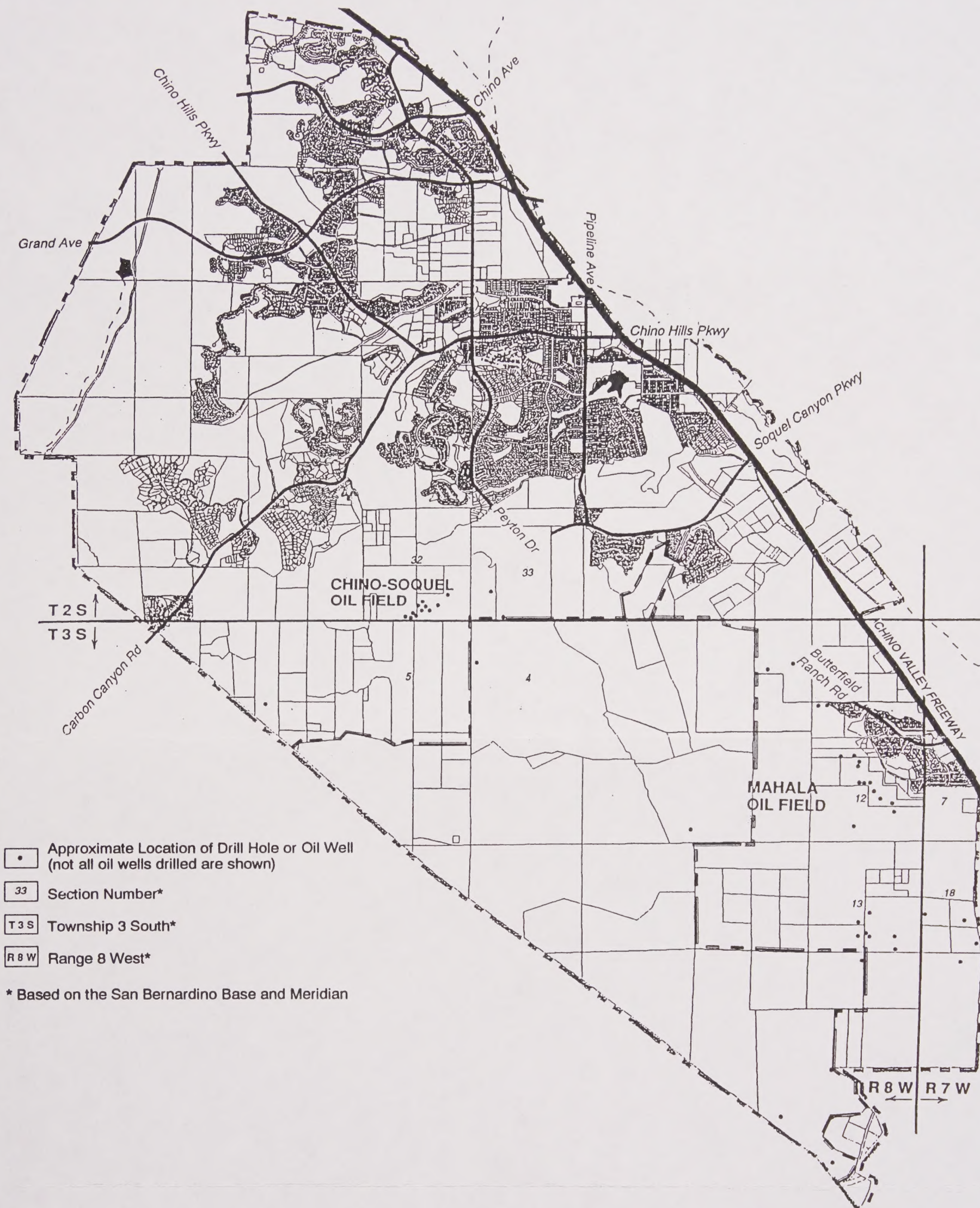
Chlorine is a greenish-yellow gas with a pungent, irritating odor that is used for water purification. The gas is noncombustible, but as a strong oxidizer it can react explosively if mixed with some common substances such as fuel gas, ammonia or turpentine. If inhaled, chlorine can irritate the eyes and nose and mouth tissues, and cause headaches, nausea and vomiting, dizziness, and other respiratory symptoms.

Oil and Gas Wells: Petroleum and natural gas have been produced from oil fields in the eastern Puente Hills since the late 1880s. The Chino-Soquel oil field is located within the corporate boundaries of the city of Chino Hills, in the rugged area around Soquel Canyon, to the east of Sleepy Hollow (see Figure S-9). More specifically, the Chino-Soquel oil field is located on the southern half of Section 32, Township 2 South, Range 8 West, and on the northern half of Section 5, Township 3 South, Range 8 West. The Mahala oil field is located south of the Butterfield Ranch development, in Sections 12 and 13, Township 3 South, Range 8 West. Regional Wildcat Maps W1-4 and W1-5 issued by the

California Division of Oil and Gas (1992 editions) indicate that there are several completed, plugged and abandoned, and dry oil and gas wells in the city.

Most of these wells were drilled between the 1930s and mid-1950s, and were probably not abandoned to current California Division of Oil and Gas regulations. If development is planned for an area known to have plugged and/or abandoned oil wells, these wells should be inspected, and if necessary, re-abandoned to current regulations. If the property is planned for development, all wells must be slurry filled to avoid future problems. The City Planning Department is required to submit building permit applications to the Long Beach Office of the California Division of Oil and Gas if an oil well is known to have occurred in the area planned for development. If according to Division of Oil and Gas records, the wells in the area were not abandoned properly, it is the responsibility of the property owner to do so. Sometimes, the cost of reabandonment is shared between the property owner and the developer. Most wells plugged after the late 1970s were closed to current standards. However, all building permit applications still should be submitted to the Division of Oil and Gas for review (Mr. D. Sanchez, California Division of Oil and Gas, personal communication, 1993).

Geological investigations that address environmental issues associated with oil field operations should be conducted prior to such areas being developed. For example, in 1985 and 1989, in the Fairfax District of Los Angeles where an oil field used to be located, methane gas venting to the surface through the parking lots and foundations ignited and exploded, causing considerable damage to the nearby buildings (Cobarrubias, 1992). Petroleum-saturated soils and soils contaminated with diesel fuel, heavy metals and/or other hazardous substances used in the drilling process may require remediation and/or disposal in a landfill that accepts hazardous waste.



• Approximate Location of Drill Hole or Oil Well
(not all oil wells drilled are shown)

33 Section Number*

T 3 S Township 3 South*

R 8 W Range 8 West*

* Based on the San Bernardino Base and Meridian

SOURCE: Leighton and Associates, Inc.

↑ North
0 5000
scale in feet

Figure S-9
Oil Fields in the Chino Hills Area



High-Pressure Fuel Oil and Gas Lines: One high-pressure fuel oil line and four high-pressure natural gas lines cross the city of Chino Hills (see Figure S-8). The high-pressure, 12-inch fuel line is operated by Southern California Edison (SCE), and is used to convey semi-refined fuel from Los Angeles County to SCE's Etiwanda plant near Rancho Cucamonga. Edison has been inspecting this line for leaks on a yearly basis, although it is now considering checking it every other year.

An electromagnetic survey is conducted on the full length of the line to identify those areas of piping where the walls have thinned. Sections of pipe that have thinned to 50 percent or more of the pipe's original thickness of 0.28 inches are replaced. If the budget allows, those sections of pipe that have thinned to 30 to 40 percent of their original thickness are also replaced. Once these sections are replaced, Edison runs first water, and then high-pressure air, through the pipe to test for drops in pressure that would indicate a leak. According to Southern California Edison, there has not been an in-service failure or a hydrostatic test failure on the fuel oil transmission pipeline in Chino Hills. (W. Goings, Southern California Edison, personal communication, 1993, and correspondence from Southern California Edison, April 15, 1994.)

SCE indicated that the fire hazard associated with a leak in this line is low, as the fuel product has a very high flash point and therefore is not flammable at temperatures below 300 to 400 degrees Fahrenheit. The most significant potential hazard associated with this fuel product is that motorists can lose control of their vehicles if they drive over spilled fuel (W. Goings, Southern California Edison, personal communication, 1993). Localized contamination of soil and even groundwater may also occur if spilled fuel is not cleaned up promptly.

The high-pressure natural gas lines that extend across the City are owned and operated by the Southern California Gas Company.

Failure of large fuel oil transmission lines could result in the temporary closure of

roads. Failure of a gas transmission line could result in road closures and evacuation of neighborhoods.

Accidents on the Chino Valley Freeway and other Truck Routes: The Chino Valley Freeway (State Highway 71) bounds the city of Chino Hills along most of its eastern limits. The Expressway is used extensively by trucks and other vehicles that carry hazardous materials (see section above on the Aerojet Ordnance). The potential for a hazardous materials release in the event of a traffic accident is high. Residential areas adjacent to the Expressway, including the Los Serranos area and Butterfield Ranch, could be impacted by a hazardous materials release, especially if the released substance is gaseous at normal temperatures and pressures.

Truck traffic is also permitted on Chino Hills Parkway, south of Grand Avenue, on Carbon Canyon Road, and on Soquel Canyon Parkway. The potential for a release of hazardous substances during a truck accident on one of these routes cannot be dismissed.

Issues and Opportunities - Hazardous Materials

1. The city of Chino Hills is predominantly a residential community, with small commercial zones centered along Pipeline Avenue, Chino Hills Parkway, Peyton Drive, Eucalyptus Avenue, and Carbon Canyon Road. At present, because there are no heavy manufacturing or industrial facilities in Chino Hills, the current hazard of a toxic material incident occurring within the city is unlikely. However, if more businesses that handle hazardous materials are developed (e.g., along the 71 Corridor), the potential for accidents will increase.
2. Businesses that handle hazardous and extremely hazardous materials above agency-established quantities are required to submit a yearly inventory and amended business plan, if changes have occurred, of the substances that they handle. Busi-

ness plans are designed to be used by the Fire District during a hazardous material release to evaluate and mitigate the situation as quickly and accurately as possible. A list of hazardous materials handlers and/or generators is maintained by the City.

C. GOALS, OBJECTIVES, AND POLICIES

Whether related to earthquakes, other hazards, or disaster preparedness, the Safety Element goals are guided by the City's responsibility to:

- minimize fatalities and injuries;
- minimize the burden on public and emergency response resources (e.g., sheriff, fire, medical);
- minimize public and private costs for cleanup, repair, and recovery; and
- minimize long-term impacts caused by business disruption and reduced fiscal resources (tax burden).

Objectives address specific concerns of long-term planning importance to the community. These statements are followed with specific policies that can be implemented to maintain or improve public safety and satisfy the objectives. The following goals, objectives, and policies are based on findings documented in the Background Information and Issues Identification section. The General Plan Major Goal and Focused Goal which direct Safety Element policy are:

Major Goal 2

A high quality of life for all residents

Focused Goal 2-1

A safe community free from man-made and natural hazards

3. At present, the San Bernardino County Environmental Health Services, Hazardous Materials Management Division is the agency responsible for inspecting businesses that have submitted business plans. The Division inspects only for compliance with disclosure laws and hazardous waste laws; it does not inspect storage, use, and handling operations. Because of staffing limitations, inspections are generally conducted every other year. Since the Fire District conducts yearly inspections of the same businesses to check for compliance with Building and Fire Codes, the responsibility of inspecting handlers for compliance with hazardous materials regulations regarding the use, handling, and storage of hazardous materials should be with the Fire District. The local Fire Code provides regulations for this purpose.
4. Structural and nonstructural failures as a result of strong ground shaking or surface fault rupture during an earthquake can increase the probability of a hazardous materials release. Risk reduction alternatives are included in the Safety Plan section.
5. Property owners and/or developers are responsible for reabandoning oil and gas wells to current standards if a building is to be sited on top of an improperly abandoned well. Building permit applications for areas where oil and gas wells have been drilled should be reviewed by the California Division of Oil and Gas.

Seismic Hazards

Many of the active faults in Southern California have the potential of generating strong ground motions in Chino Hills. The San Andreas and San Jacinto faults are thought to have the highest probabilities of generating a moderate to large earthquake in the near future. However, the Chino fault should be considered the probable worst-case scenario for Chino Hills, posing the greatest threat to public safety and economic welfare. A maximum credible earthquake on the Chino fault, of estimated magnitude 6.8, would produce near-field, high-frequency ground motions in the city of about 0.35 to 0.6g, with Modified Mercalli intensity values ranging from VIII to IX. Such an earthquake would cause extensive damage to buildings and infrastructure as a result of strong ground motions, ground rupture, and possibly liquefaction.

Potential impacts from surface fault rupture and liquefaction are best mitigated through advanced planning, special analysis, and code enforcement. Although the Chino fault is not within a State-mandated Alquist-Priolo Special Studies Zone, a Fault Hazard Zone has been designated for this fault.

Objective 1-1

Encourage homeowners and building owners to retrofit and rehabilitate wood frame structures built prior to 1952, mobile homes, precast concrete tilt-up buildings built prior to 1973, unreinforced masonry structures, and soft-story buildings. The City's annual objective will be to assist 30 households (25 owner-occupied and 5 renter) through the County's housing rehabilitation programs (see Housing Element Program 1). In addition, the City will conduct a survey of all commercial development with concrete tilt-up construction (built prior to 1973) and soft-story buildings in order to focus future rehabilitation efforts.

Policy 1-1.1

Support the design and maintenance of conventional development under provisions of Seismic Zone 4 of the Uniform Building Code, and ensure quality construction and optimum structural and architectural design for conventional development. Ground shaking effects can generally be satisfactorily mitigated by conformance with the latest Uniform Building Code in the design of one- or two-story structures. Structures of greater height should be designed based on site-specific ground response analyses.

Policy 1-1.2

Discourage pole platforms as foundations for new single-family residences, and encourage correction of existing foundation problems of older pre-1952 residences.

Objective 1-2

Continue to require geological and geotechnical investigations of all new developments in areas of potential seismic or geologic hazards as part of the environmental and development review process.

Policy 1-2.1

Continue to require field investigations within the Chino Fault Hazard Zone to adequately evaluate whether the fault traces within the zone have been active within the last 10,000 years. This should apply to new development, and to substantial improvement or redevelopment of residential, commercial, or industrial parcels or tracts which amounts to more than half the assessed property value. These studies should be conducted by a California-registered engineering geologist and should be consistent with State guidelines as defined in the Alquist-Priolo Special Studies Act.

Policy 1-2.2

Establish construction setbacks from a fault based on direct geologic evidence such as trenching. It is up to the project's geological consultant to determine whether a construction setback is required from fault traces that do not show evidence of having been active in the Holocene epoch (about the last 10,000 years). Discretionary approval by the City's Department of Building and Planning will be required to ensure an acceptable level of effort for excavations and acceptable setbacks.

Policy 1-2.3

Observe prudent land use planning in the Fault Hazard Zone delineated for the Chino fault as follows:

- *Critical structures, including schools, hospitals, high-occupancy facilities (shopping centers, auditoriums, etc.), fire and police stations, and emergency operation centers should not be located within the Fault Hazard Zone delineated for the Chino fault.*
- *Limited residential development would be permissible within the zone, but with the acknowledgment that lower lot densities may result from restrictions which specify nonstructural areas as part of buildable lots.*
- *Restricted fault zone areas may be used as parks or recreational areas.*
- *Water tanks and reservoirs should not be sited within the Fault Hazard Zone unless trenching studies conclude that the potential for surface fault rupture is low to none, and the structures can be designed for the high ground accelerations expected to occur at the site from a maximum credible earthquake on the Chino fault.*
- *Streets and utility lines probably would not be constrained significantly by the fault zone; however, major transmission or distribution lines that extend across the fault zone should be planned with redundancies in the system, or with*

flexible joints and/or strong welds that can accommodate some fault movement. Do not align streets or utility lines over the fault.

Policy 1-2.4

Conduct geologic studies during grading or foundation excavations in order to verify the location and activity status of faults that have been mapped as potentially active or inactive. If a fault is determined to be active, setbacks from the fault should be established. Setbacks from inactive faults are not considered necessary.

Policy 1-2.5

Conduct site-specific studies on the soils, seismicity, and groundwater conditions to evaluate the potential for liquefaction and related ground failure phenomena in canyon bottoms and the alluvial flatlands on the eastern portion of the city. Mitigation measures would be designed based on these studies. In some areas, it is not economically feasible to completely mitigate these hazards, but their effects can be minimized by measures such as densification of near-surface soils, and dewatering.

Objective 1-3

Amend the City's Municipal Code by 1995 as necessary to require structural review by a certified engineer when a high-occupancy or other critical structure undergoes substantial improvement or resale.

Policy 1-3.1

Review proposed projects to ensure that stairways and elevators are adequately strengthened and that emergency generators, computers, and other vital nonstructural elements are securely anchored.

Policy 1-3.2

Encourage City Public Works input early in the project review process for critical facilities.

Geologic Hazards

Geologic hazards of greatest concern in the City of Chino Hills include slope instability, expansive and compressible soils, and erosion. A large portion of the city has been mapped as generally susceptible to most susceptible to landsliding. Recently deposited stream sediments in canyon bottoms are susceptible to settling if subject to heavy loads, such as from building foundations. Some of the soils and bedrock units that underlie Chino Hills have a moderate to high expansion potential. Structures sited on untreated, highly expansive materials can experience substantial structural damage as a result of shrinking and swelling of these soils.

Grading and construction operations are necessary to mitigate expansive and compressible soils, erosion, landsliding, and flooding in hillside areas. However, grading operations are sometimes in conflict with other considerations, such as aesthetics or the preservation of the natural, existing topography. The best development solution balances both of these objectives.

Objective 2-1

Continue to use the environmental and development review process to ensure prudent development and redevelopment of all land within the moderate to high landslide susceptibility zones.

Policy 2-1.1

Require that careful, site-specific evaluations based on detailed surface and subsurface geotechnical studies be conducted in areas where landslides are suspected or known to occur. These studies should be required as part of the application process for specific development proposals.

- *Evaluate site stability, including site response to seismic events and possible impact on adjacent properties, before final project design is approved.*

- *Continue to require preliminary investigations of tract sites by State-registered geotechnical engineers and certified engineering geologists (Chapter 70 of the Uniform Building Code), and improve regular inspection of grading operations to maximize site safety and compatibility with community character. State-certified geotechnical engineers and engineering geologists should also prepare the consultant reports, investigations, and design recommendations required for grading permits, building permits, and subdivision applications.*

Policy 2-1.2

Support mitigation of public and private property located on unstable hillside areas, especially slopes with recurrent failures, where City property or public right-of-way is threatened by slope instability or where considered appropriate or urgent by the Public Works Department, the Fire District, or the Sheriff's Department.

Policy 2-1.3

Investigate the feasibility of forming assessment districts or geologic hazard abatement districts to encourage cost-effective measures to mitigate existing seismic, landslide, or erosion hazards. Such an approach should include provisions for:

- *Slope reconstruction, debris protection, slope maintenance, and improved drainage and slope cover; and*
- *Permanent mitigation of earthquake- or rain-induced slope instability problems that can block roadways that are vital for emergency or fire response activities.*

Policy 2-1.4

Implement a third-party review system for geotechnical reports submitted for development or redevelopment in areas within the Chino Fault Hazard Zone or in marginally to high landslide susceptibility zones. The review shall be conducted by qualified, State-certified geotechnical engineers and engineering geologists.

Objective 2-2

Develop a geologic disaster recovery plan by 1995 to be implemented if severe winter storms cause extensive landsliding or erosion.

Policy 2-2.1

Require site-specific geotechnical investigations before permitting reuse or rebuilding of a failed area, adjacent unstable slopes, or debris flow path; and establish standards for improved setbacks, surface and subsurface drainage improvements, construction of buttresses or other retaining structures, or slope reconstruction, to minimize future risk to persons and property, and to reduce public liability.

Policy 2-2.2

Examine soil and bedrock materials with high expansion potentials, and compressible soils, prior to and during grading. Impacts from compressible and expansive soils generally can be mitigated using standard engineering measures that are based on detailed soil investigations.

Objective 2-3

Discourage any grading beyond that necessary to create adequate building pads. Follow grading guidelines contained in the City's Development Code, which will be completed by late 1994.

Policy 2-3.1

Require that:

- *Slopes be contoured to blend with the natural terrain;*
- *Slopes be replanted or otherwise stabilized as soon as practical after grading; and*

- *Plans for sedimentation basins and other drainage devices to control off-site sedimentation impacts be provided as conditions of project approval.*

Policy 2-3.2

Discourage excessive grading of slopes greater than 3:1 (three horizontal to one vertical), but, where allowed, encourage varied slope ratios on design slopes to reduce the visual impact of grading.

Policy 2-3.3

The City shall:

- *Prohibit residential development which is to be built on fill of any kind in the absence of any mitigation;*
- *Permit design cut slopes steeper than 2:1 (two horizontal and one vertical) only with adequate geologic investigation and certified recommendations; and*
- *Prohibit fill slopes steeper than 2:1.*

Flood and Inundation Hazards

Potential seismically induced inundation hazards in Chino Hills include flooding of the eastern portions of the city as a result of failure of San Antonio Dam while its reservoir is full, and localized flooding if the dams for Lake Los Serranos or Lake Arnold fail during an earthquake. Proposed improvements to the Prado Dam Basin would impact those areas of the city at elevations below 566 feet above mean sea level. Strong ground motions generated by an earthquake could also damage the water tanks in the city, especially if these are not baffled and braced. Localized storm flooding has occurred historically in Chino Hills, the result of inadequately sized drainage facilities that cannot convey the storm flows generated from increased urbanization of the area.

Objective 3-1

Restrict all new development in areas prone to flooding or within dam inundation areas (see Figure S-6).

Policy 3-1.1

Prohibit development of residential, commercial/industrial, and critical facilities in the 100-year flood plain and in canyon bottoms.

Policy 3-1.2

Discourage development of critical facilities proposed in dam inundation areas.

Policy 3-1.3

Coordinate with the U.S. Army Corps of Engineers, the San Bernardino County Flood Control and Water Conservation District, and land use agencies to keep current on the proposed improvements to the Prado Dam Basin. Detailed studies on the effects of a higher reservoir elevation to those areas of the city that would be impacted by these modifications (including Los Serranos and the Butterfield Ranch areas) should be conducted and appropriate mitigation measures, if necessary, identified.

Policy 3-1.4

Encourage the preparation of dam inundation maps for Lake Los Serranos and Arnold Reservoir to evaluate the potential for injury and loss of life, and damage to public and private property, as a result of inundation resulting from catastrophic failure of these dams. If the risk from inundation is considered to be too great to critical facilities and/or residential structures, the structures that could be impacted should be relocated, or the reservoir levels lowered, to reduce the risk to an acceptable level.

Policy 3-1.5

Require that State-certified structural engineers design proposed water tanks to withstand high ground accelerations. The water tanks should be baffled and braced to reduce the potential for structural damage, with resultant failure and flooding of areas

downslope, as a result of water in the tanks sloshing back and forth with great force during an earthquake. Existing water tanks should be inspected and retrofitted as necessary.

Objective 3-2

Register to participate in the National Flood Insurance Program, and have the city remapped for flooding hazards by 1995, concentrating on those areas of the city where there has been significant development since the last survey was conducted, and those areas that were not originally mapped.

Objective 3-3

Prepare a Master Flood Control and Drainage Plan by 1996 to identify where drainage improvements are necessary to reduce the threat of inundation in developed areas of the city.

Policy 3-3.1

Design the drainage system to adequately handle future flows and alleviate potential flooding hazards associated with increased urbanization in the city.

The drainage system for the area should include retention basins to retard the volume and velocity of storm runoff, debris basins to trap sediment that otherwise could clog channels resulting in overflows and related flooding and erosion, and channel modification within unlined channels to reduce the water's velocity.

Policy 3-3.2

Require that the potential environmental drainage impacts of new construction be assessed, including the impact that privately owned and operated storm drains adjacent to

slopes and canyon areas would have on City- and County-maintained drains.

Policy 3-3.3

Review individual project designs to ensure that proposed drainage facilities will be properly linked with community-wide drainage facilities.

Policy 3-3.4

Coordinate the construction of a comprehensive storm drain system with individual projects in the General Plan area to ensure that all new development will be adequately protected from flooding prior to completion of the backbone system.

Policy 3-3.5

Develop a schedule for funding of all flood control backbone facilities, including phasing.

Policy 3-3.6

Require that homeowners install and maintain storm drains in their properties.

Policy 3-3.7

Strengthen storm drain maintenance district efforts to prevent local flooding, and to prevent mud and debris flows from overtaxing storm drains during strong storms.

Objective 3-4

Adopt mandatory grading standards in the City's Development Code by late 1994 to control potential flooding problems associated with construction.

Policy 3-4.1

Require that measures be undertaken to control runoff from construction sites.

Policy 3-4.2

Require prompt revegetation and/or construction of newly graded sites to control erosion.

Policy 3-4.3

Limit grading operations during the rainy season.

Policy 3-4.4

Review individual project designs to ensure the stability of slopes adjacent to flood control facilities, which could be blocked due to slope failures.

Fire Hazards

Most of Chino Hills is located in a high to very high fire hazard area due to the steep topography, occurrence of highly flammable vegetation, and predominance of Santa Ana wind conditions.

Objective 4-1

Coordinate plans between the City's Public Works Department and the Fire District to improve the fire fighting infrastructure by 1995.

Policy 4-1.1

Improve fire flow capabilities in the city by upgrading the water distribution system so that it can deliver the fire flow requirements set in the Fire Code adopted by the City. Priority should be given to upgrading fire flow capabilities in the Los Serranos and Carbon Canyon areas, and other sections of the city where the Fire District has noticed deficiencies.

Policy 4-1.2

Old cast-iron pipelines and inadequately sized water mains shall be replaced when street improvements are made.

Policy 4-1.3

Provide for redundant emergency distribution pipelines in areas of potential ground failure or where deemed necessary by the Fire District and the Public Works Department.

Policy 4-1.4

Inspect water hydrants and conduct fire flow tests on an annual basis, with priority given to high fire hazard areas.

Policy 4-1.5

Ensure that existing multi-unit or high occupancy facilities maintain minimum acceptable rates of fire flow, as established in the Fire Code adopted by the City.

Policy 4-1.6

Coordinate with the Chino Valley Independent Fire District to support the development of secondary water supplies for emergency fire flow needs, including supplementary gravity-fed municipal water tanks and auxiliary water distribution systems, especially in areas of potential ground failure.

Objective 4-2

The City, in cooperation with the Chino Valley Independent Fire District, shall pursue and upgrade the Insurance Service Office rating for Chino Hills by 1995.

Policy 4-2.1

Ensure that fire suppression and law enforcement services, including availability of fire equipment and personnel, infrastructure, and response time, are adequate to respond to a major disaster.

Policy 4-2.2

Require construction of new fire station facilities and/or the relocation of existing facilities to comply with accepted service level criteria.

Policy 4-2.3

Upgrade and revise the Fire Hazards areas as needed based on development growth patterns and improvements of the fire suppression systems. This should be conducted under authority of the Chino Valley Independent Fire District.

Objective 4-3

Continue to enforce construction and design standards to ensure that all proposed development incorporates fire prevention features. All high-risk development must meet mandatory fire protection standards.

Policy 4-3.1

Require mandatory transportation standards related to access, driveways, cul-de-sacs, and access into open areas.

Policy 4-3.2

Require mandatory land use standards related to submission of development plans and provisions of area fire protection services.

Policy 4-3.3

Encourage owners of structures with unrated roof covering materials, and with Class B and lesser fire-resistive roof covering materials, to upgrade to Class A fire-resistive construction, including fire-resistive eaves, awnings, and sidings.

Policy 4-3.4

Require the installation of sprinkler systems in buildings that are not readily accessible to fire fighting equipment and apparatus or do not meet minimum fire flow and fire hydrant requirements.

Policy 4-3.5

Require mandatory building standards related to building setbacks, fire-retardant roof materials, siding materials, exposed horizontal surfaces, chimneys, fire sprinkler systems, and use of fire-resistive construction materials.

Objective 4-4

Continue to implement and enforce, on an annual basis, fuel modification zones for all existing and proposed development.

Policy 4-4.1

Continue to support and implement fuel modification zones around housing tracts.

Policy 4-4.2

Consider implementing a vegetation management plan, including prescribed burning, in the undeveloped areas of the city.

Policy 4-4.3

Encourage residents to plant and maintain fire-retardant slope cover to reduce the risk of brush fire in areas adjacent to canyons; and develop stringent site design and maintenance standards for areas with high fire hazard potential.

Objective 4-5

Support CVIFD's long-range fire planning to cope with increased urban density, redevelopment, and property infilling. Long-range plans would include provisions for stringent Building and Fire Code standards, improvements to the infrastructure systems, as needed, to effectively handle future fire fighting requirements, and mutual aid agreements with the public and private sector. Chino Hills will review and update these plans and requirements by late 1995.

Policy 4-5.1

Continue to provide for public education programs to enhance public awareness of fire safety, including the storage of flammable materials, use of fire-retardant building materials, and vegetation management in the perimeter of structures.

Policy 4-5.2

Provide public information and support private efforts to restrain gas-fired appliances in residential buildings. Encourage the installation of earthquake-triggered automatic gas shut-off sensors in high-occupancy facilities and in industrial and commercial structures.

Policy 4-5.3

Encourage the Fire District to review its agreement to coordinate for mutual aid and fire services with fire agencies from adjacent cities and counties.

Policy 4-5.4

Work with the Fire District to enforce all existing codes and ordinances regarding fire protection, including building inspection and vegetation management.

Policy 4-5.5

Require high-risk areas to have community-based support systems to aid the Fire District and residents.

Objective 4-6

Include monies in the City's Capital Improvement Program for the next five years (1995-2000) to maintain or improve the ability of the City's infrastructure system to satisfy future fire fighting requirements.

Policy 4-6.1

Develop improved circulation within the city and improved access to outlying areas for efficient movement of fire fighting equipment and the safe evacuation of residents.

Policy 4-6.2

Develop evacuation plans for areas in greatest danger of fire.

Hazardous Materials

Given its residential setting, very few businesses in Chino Hills presently handle, generate, or transport hazardous substances. As

the commercial and industrial base in the city is developed and expanded, the potential for release of hazardous substances increases. Hazardous substances are also transported on the Chino Valley Freeway, thereby increasing the potential for a hazardous materials release. In addition, some areas of the city were used for oil extraction. As a result of these activities, some soils may be contaminated with hydrocarbons and other hazardous substances.

Objective 5-1

Continue to enforce provisions of the Uniform Fire Code and Uniform Building Code regarding secondary containment; segregation of chemicals to reduce reactivity during a release; sprinkler and alarm systems; and monitoring, venting, and automatic shut-off systems on all new developments.

Policy 5-1.1

Continue to require businesses that use, store, or generate hazardous materials to annually notify the San Bernardino County Hazardous Materials Management Division.

Policy 5-1.2

Coordinate with County officials and the Chino Valley Independent Fire District to annually review and monitor businesses that handle or store hazardous materials. The inspections should include confirming the accuracy of information provided in the business plans. Encourage the more direct participation of the Fire District in the inspection and implementation of hazardous materials containment facilities and other mitigation measures.

Policy 5-1.3

Encourage businesses to reduce the risks posed by an unauthorized release of hazardous materials. Specific actions that businesses can implement include:

- Performing hazardous materials inventories and audits, including conducting earthquake vulnerability analyses;*
- Implementing various types of mitigation measures, including the use of special structural designs for buildings, tanks, and pipeline supports; use of specially designed shelving systems or containers; use of seismic restraints on equipment (such as bracing, anchors, and straps); and controlling risks through secondary containment, or chemical isolation and separation of incompatible chemicals; and*
- Encourage and promote training of the company's emergency personnel, and develop emergency response and warning systems.*

Objective 5-2

Control the transportation of toxic, explosive, and other hazardous materials by requiring business owners to follow designated hazardous materials transportation routes.

Policy 5-2.1

Coordinate with adjacent jurisdictions to formulate regional objectives for hazardous materials management.

Policy 5-2.2

Coordinate with the State Office of Emergency Services, the State Highway Patrol, the San Bernardino County Department of Environmental Health Services, the Fire District, and the Sheriff's Department to develop regional plans for transportation routes and mutual aid for hazardous materials response.

Policy 5-2.3

Regulate and limit the transport of vehicles carrying hazardous materials through the city.

Policy 5-2.4

Support annual checks for leaks of high pressure fuel and natural gas transmission lines.

Objective 5-3

Require all new developments occurring within areas previously utilized for oil production (see Figure S-9) to mitigate any hazards associated with the oil fields.

Policy 5-3.1

Confirm that oil and gas wells in areas proposed for development are abandoned to current standards set by the California Division of Oil and Gas. This should be accomplished by submitting to the Division of Oil and Gas for review all building permit applications for proposed developments in oil field areas.

Disaster Response Planning

The City's Emergency Response Plan is currently (Jan. 1994) being prepared. The Emergency Response Plan establishes the responsibilities of the various City agencies during a disaster. Planning issues pertaining to emergency response, disaster preparedness, and disaster recovery require an assessment of the hazards, identification of functions and resources to handle short-term response, and development of procedures for recovery.

Individuals and private businesses should also take on the responsibility of protecting themselves from harm. Assistance from private individuals and agencies can provide Chino Hills with increased resources to better protect the public's health, safety, and welfare.

Objective 6-1

Enforce code regulations to minimize the scope of a disaster, and take other actions to prepare and respond effectively to emergencies. Adopt these regulations as part of the City's Development Code and Emergency Response Plan in late 1994.

Policy 6-1.1

Establish an Emergency Operations Center (EOC) to coordinate and direct overall emergency response operations. The establishment of the EOC should be coordinated with the Fire District, Sheriff's Department, and appropriate City departments.

Policy 6-1.2

Develop and maintain a State-mandated Multihazard Functional Plan, and update emergency plans, contacts, and liaisons with City, State, federal, and privately operated emergency response organizations every five years.

Policy 6-1.3

Establish an emergency response organization consisting of representatives from County agencies, the Fire District, City departments, utility agencies, schools, and the public. This would include establishing a line of command to ensure that the decision making process will function satisfactorily in the event of a major disaster.

Policy 6-1.4

Establish and maintain mutual aid agreements with neighboring cities and counties; State and federal emergency relief agencies; and private enterprises such as Red Cross, Salvation Army, and local medical institutions to assist in shelter, relief, and first aid operations. Encourage cooperation among adjacent communities to provide backup fire suppression and law enforcement assistance in emergency situations.

Policy 6-1.5

Designate and maintain emergency shelters and reception centers (e.g., public schools) through coordination with County Public Social Services and the local Red Cross chapter.

Policy 6.1-6

Establish traffic control contingency plans for disaster routes, and support actions to provide secondary access to development or widening of arterials to promote better traffic flow.

Policy 6.1-7

Coordinate with the County Sheriff and the Fire District to identify casualty collection points and sheriff/fire staging areas.

Policy 6.1-8

Participate in countywide emergency earthquake scenarios.

Policy 6.1-9

Regularly review the technical data on public safety and seismic safety for use in the planning process, and undertake a technical update of the Safety Element every 10 years.

Objective 6-2

By 1996, coordinate with building managers of high-occupancy facilities, care centers (nursing homes, day care centers, etc.), and critical facilities located in the city to facilitate emergency response.

Objective 6-2.1

Develop and implement a public education program to increase public awareness of earthquake hazards and identify steps that can be taken by individuals and neighborhood groups to reduce these hazards.

Policy 6-2.1

Encourage private businesses to develop disaster preparedness plans for their employees.

Policy 6-2.2

Encourage private residents to stockpile water and food supplies, and to have earthquake preparedness kits in their homes, offices, and automobiles.

Objective 6-3

Develop plans for short-term and long-term post-disaster recovery as part of the City's Emergency Response Plan by late 1994.

Policy 6-3.1

Consider developing and adopting a pre-disaster ordinance for post-disaster recovery and reconstruction that includes provisions for debris clearance, damage assessment, demolitions, re-occupancy and building moratorium criteria, fee waivers and deferrals, and expedited permitting procedures for repair and reconstruction.

D. SAFETY PLAN

This section of the Safety Element contains the City's strategy for everyday emergencies and major disasters. Many of the issues discussed in previous sections (e.g., seismic, fire, flood/inundation, and hazardous materials) are addressed through these emergency strategies. Additional mitigation is included for geologic hazards.

Emergency Response and Action

The State and federal governments require local governments to prepare and maintain emergency plans as a condition of certain funding assistance. Emergency plans must meet the standards described in the State of California Office of Emergency Services (OES) Multi-Hazard Functional Planning Guidelines (OES, 1985). The City of Chino Hills is presently preparing its first Emergency Response Plan. In the meantime, the City is using Chino's Emergency Response Plan (K. Gotch, City of Chino Hills Community Services, personal communication, 1993).

The document will include an inventory of medical facilities, emergency facilities, evacuation routes, and response plans. The following discussion is a preliminary analysis of these resources:

Medical Facilities: There are no hospitals in Chino Hills. The nearest acute care hospitals are:

- Chino Valley Medical Center - 5451 Walnut Avenue, Chino
- Pomona Valley Community Hospital - 1798 North Garey, Pomona
- Doctor's Hospital of Montclair - 5000 San Bernardino Street, Montclair
- San Antonio Community Hospital - 999 San Bernardino Street, Upland
- Ontario Community Hospital - 550 North Monterey, Ontario

Emergency Operation Centers: The Chino Hills Public Library has been tentatively designated as the city's Emergency Operations Center (EOC). However, the library building has yet to be outfitted with the equipment necessary to operate the Emergency Operations Center (K. Gotch, City of Chino Hills, personal communication, 1993). The administrative offices of the Chino Valley Independent Fire District may serve as an alternative EOC, since the communications equipment available in the Fire District offices would make this location more efficient for District-wide emergency response.

Evacuation Routes: Evacuation involves relocation of occupants from threatened buildings or neighborhoods to ensure public safety. Disaster routes function as primary thoroughfares for movement of emergency response traffic, such as fire control. Disaster routing and evacuation are similar in that road blockage or traffic jams can reduce response times. However, evacuation activities are controlled by particular situations and often require improvisation.

Flooding, landslides, brush fires, and earthquake-generated debris can restrict access to residential neighborhoods with only single routes of entry. Some areas in the hilly portions of the city can be accessed by only one major road, such as Carbon Canyon Road. These areas can become inaccessible

as a result of road blockage caused by landslides or road wash out during floods. Although less likely to occur in the city, hazardous materials incidents can complicate evacuation procedures because of the undetectable nature of some toxic chemicals, and because the movement of gas plumes cannot be readily predicted.

Figure S-10 shows a select set of disaster routes designated for the city of Chino Hills in this study. Disaster routes include major arterials, such as the Chino Valley Freeway (State Highway 71), Grand Avenue, Chino Hills Parkway, Carbon Canyon Road, Peyton Avenue, Soquel Canyon Parkway, and Pipeline Avenue. Following an earthquake or similar regional disaster, a field reconnaissance of the major disaster routes should be conducted to evaluate which routes are open to vehicular traffic and can be used for evacuation.

Agency Responsibility and Coordination: One of the critical components of emergency response plans (generally called Multi-Hazard Functional Response Plans, MHFRPs) is the emergency response organizations. The City's new MHFRP will include an inventory of groups responsible for emergency response, which may include:

- **Emergency Operations Center (EOC)** - coordinates and directs local and mutual aid resources to urgent crisis situations. The center operates as a liaison with the County, other emergency operations centers in adjacent cities, and the Governor's Office of Emergency Services. The EOC is generally staffed by representatives from County agencies, City departments, utility agencies, schools, and volunteer groups.
- **Sheriff Department** - provides perimeter and crowd control, restricts and reroutes traffic, and manages evacuations as required. The San Bernardino County Sheriff Department is presently responsible for law enforcement activities in the city of Chino Hills.

Chapter 6 Parks, Recreation and Open Space Element

A. INTRODUCTION

The Parks, Recreation and Open Space Element of the City's Comprehensive Plan provides a guiding framework for the development of parks, recreation and open space facilities and programs, and the preservation, development, and use of open space lands in the City.

This element addresses the need for parks, recreation and open space facilities, and programs, and the preservation, development, and use of open space lands in the City. The element also provides a framework for the development of parks, recreation and open space facilities and programs, and the preservation, development, and use of open space lands in the City.

A separate document, the Master Plan for Parks, Recreation, and Open Space for the City of Chicago, is being developed as a tool to guide the planning and development of parks, recreation and open space facilities and programs. The Master Plan will provide a framework for the development of parks, recreation and open space facilities and programs, and the preservation, development, and use of open space lands in the City. The Master Plan will also provide a framework for the development of parks, recreation and open space facilities and programs, and the preservation, development, and use of open space lands in the City.

B. PARKS, RECREATION AND OPEN SPACE ISSUES

The Parks, Recreation and Open Space Element of the City's Comprehensive Plan provides a guiding framework for the development of parks, recreation and open space facilities and programs, and the preservation, development, and use of open space lands in the City. The element also provides a framework for the development of parks, recreation and open space facilities and programs, and the preservation, development, and use of open space lands in the City.

Parks

1. The City's parks system is a key component of the City's Comprehensive Plan.

2. The City's parks system is a key component of the City's Comprehensive Plan.

3. The City's parks system is a key component of the City's Comprehensive Plan.

4. The City's parks system is a key component of the City's Comprehensive Plan.

5. The City's parks system is a key component of the City's Comprehensive Plan.

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8. The City's parks system is a key component of the City's Comprehensive Plan.

9. The City's parks system is a key component of the City's Comprehensive Plan.

10. The City's parks system is a key component of the City's Comprehensive Plan.

Parks, Recreation and Open Space Element

11. The City's parks system is a key component of the City's Comprehensive Plan.

12. The City's parks system is a key component of the City's Comprehensive Plan.

13. The City's parks system is a key component of the City's Comprehensive Plan.

14. The City's parks system is a key component of the City's Comprehensive Plan.

1. The first step in the process is to identify the problem or goal that needs to be addressed.

2. Next, it is important to gather all relevant information and data that will help in understanding the problem.

3. Once the information is gathered, the next step is to analyze it and identify the root causes of the problem.

4. After analyzing the data, the next step is to develop a plan or strategy to address the problem.

5. The final step is to implement the plan and monitor the progress to ensure that the problem is resolved.

6. Once the problem is resolved, it is important to evaluate the process and make any necessary adjustments.

7. The next step is to communicate the results of the process to all relevant stakeholders.

Power, Resistance and Open Space Element

8. The next step is to identify the power dynamics within the organization and how they may affect the process.

9. It is also important to identify any resistance to change and develop strategies to address it.

10. The next step is to develop a communication plan to ensure that all stakeholders are kept informed throughout the process.

11. It is also important to establish a timeline for the process and ensure that all tasks are completed on time.

12. The next step is to evaluate the results of the process and make any necessary adjustments.

13. It is also important to document the results of the process and share them with all relevant stakeholders.

14. The final step is to celebrate the success of the process and recognize the contributions of all team members.

Chapter 6 Parks, Recreation and Open Space Element

A. INTRODUCTION

The Parks, Recreation and Open Space Element for Chino Hills will assist in guiding the development of future park and recreation facilities and programs, and the preservation, management, and use of open space lands in the City.

This element addresses not only current needs, but projected recreation needs to the year 2013, with recommendations for facility and program improvements. This element also addresses critical issues regarding open space areas.

A separate document, the Master Plan of Parks, Recreation, and Open Space for the City of Chino Hills was developed as a tool to guide the planning and development of future recreation facilities and programs. The recommendations contained in the Master Plan are based on information obtained during an extensive community driven planning process, which included citizen participation through a series of community workshops and phone survey. This element summarizes the recommendations detailed in the Master Plan that will guide the City during the development of future facilities and programs.

B. PARKS, RECREATION AND OPEN SPACE ISSUES

The Parks, Recreation and Open Space Element discusses issues identified by the residents of Chino Hills through workshops and phone survey. The following outline summarizes those issues, which are detailed in upcoming sections of the Element.

Trails

- Link trails into a system, and link the system to the State Park.
- Provide trails through the State Park.
- Preserve the rural atmosphere of the City.
- Provide better access points to the trail system.
- Make the trails accessible to everyone.
- Safety should be a top priority including maintenance, fire danger, emergency vehicle access, restricted access.
- Educate trail users regarding safety issues.
- Protect the rural atmosphere of Chino Hills
- Improve the trails to make the system more accessible and usable.
- Safety and education issues should be addressed by the City as soon as possible.

Sports

- Provide adequate parking at all facilities.
- There is currently a lack of facilities for the top sports in Chino Hills - softball, baseball, soccer, basketball, and football.
- Create a sports center that will introduce children to a lifetime of sports.
- Jointly use school facilities to benefit the entire community.

- Develop multi-use facilities that can be used by everyone.
- More sports facilities are needed within the City limits.

Open Space

- The visual quality and rural atmosphere of Chino Hills must be maintained by protecting the trees, woodland areas, treeline, cliffs, skyline, ridgeline, springs, waterways, and views to the mountains.
- Develop guidelines for accepting open space lands.
- Protect large scale natural areas to preserve biological diversity.
- Create wildlife habitat and preserve natural habitat.
- Maintain wildlife corridors.
- Develop a nature/interpretive center.
- Use some of the open space areas as community gardens, orchards, cattle grazing, par course, and specialized uses.
- Exchange poor park land for good land.
- Protect this resource while still providing ways to utilize these areas for the benefit of the community.

Park and Cultural Facilities and Programs

- Need to provide an even distribution of recreation opportunities.
- Need more local indoor facilities and play equipment/areas for older kids.
- A community center is needed.

- Provide trail connections to all the parks.
- Develop a community newsletter that informs the citizens of the location of parks and programs.
- There is a problem with a lack of facilities to hold programs such as meeting rooms, classrooms, and a swimming pool.
- Needed programs include sports classes and camps, education and entertainment classes, human services, and cultural arts.
- Obtain buildings no longer needed by the school district for recreation programs.
- The city needs a centrally located community building with a kitchen and a method of transportation for senior programs.
- Programs for older adults could include crafts, games, nutrition, trips and tours, health screening, peer counseling, and exercise facilities.

C. GOALS, OBJECTIVES AND POLICIES

This section incorporates Parks, Recreation and Open Space issues into concise statements - goals, objectives, and policies - which will direct the City's actions. Each general "goal" is put into action by more detailed "policies". Each "objective" defines the steps needed to achieve the desired end results. The overall direction for the Parks, Recreation and Open Space Element is summarized by the following "major" and "focused" goals. The objectives that follow the goals are categorized according to the Parks, Recreation and Open Space issues: Facilities, Trails, Open Space, Recreation Programs, Community Participation, Community Image and Resource Management.

Major Goal #1

Preserve Rural Character

Focused Goal 1-1

Protect and Preserve the natural features of Chino Hills' open space, such as the ridgelines, native vegetation, wildlife, springs and waterways.

Major Goal 2

A High Quality of Life for All Residents

Focused Goal 2-8

Provide active and passive park facilities and recreation programs that will satisfy the basic leisure time needs of the City's residents and enhance the quality of life in Chino Hills.

Focused Goal 2-9

Develop a network of multi-use trails that safely connects neighborhood recreation sites, adjacent communities and the State Park, and areas of scenic interest within the City.

Focused Goal 2-10

Provide a wide variety of recreation programs that meet the diverse needs of the community and contribute to the physical and mental health of the population.

Focused Goal 2-11

Continue to seek community input and community support on development of park and recreation programs.

Focused Goal 2-12

Create a strong community image for Chino Hills using the parks in the City.

Major Goal #4

Protection of the Natural Environment

Focused Goal 4-3

Manage the natural and ornamental landscape areas of Chino Hills by properly scheduling maintenance activities and by carefully assigning the use of resources that help keep the landscape viable and functioning.

Open Space

Objective 1-1

Develop a plan that protects and preserves the natural features of the open space while providing for use of these areas by the community.

Policy 1-1

Develop a method for protecting and maintaining the open space in perpetuity, and oversee the protection of these areas.

Policy 1-2

Accept for development as public open space, only land that meets the standards recommended for development by the adopted Parks, Landscape and Open Space Standards Manual.

Policy 1-3

Protect prominent ridgelines and knolls in their natural condition.

Policy 1-4

Protect native trees and cliffsides because they provide habitat for wildlife such as birds that keep the rodent population in check and add to the aesthetic value of the open space.

Policy 1-5

Protect the natural springs and waterways because they provide needed habitat for wildlife, and have the greatest biological diversity.

Policy 1-6

Provide adequate access for fire, emergency and maintenance equipment.

Policy 1-7

Preserve large scale natural areas to protect biological diversity and enhance recreation opportunities.

Policy 1-8

Make open space areas available for the community by providing safe and controlled trail system access points.

Policy 1-9

Encourage dedications of open space adjacent to or connecting to the State Park.

Policy 1-10

Connect open space areas with wildlife corridors and connect to adjacent open space areas such as the Chino Hills State Park, Prado Basin and Coal Canyon to encourage ecosystem health.

Policy 1-11

Provide wildlife habitat through the protection and enhancement of natural resources.

Policy 1-12

Promote economic viability by balancing managed preservation areas, revenue generating recreational opportunities, and potential commercial ventures such as wood lots, grazing, agricultural production where appropriate.

Policy 1-13

Limit grading for trails and other development in the hillsides and maintain the natural topography as much as possible by utilizing existing roads and fire breaks.

Policy 1-14

When it is consistent with good management practice, plant new vegetation that is compatible with native plant communities of the specific area.

Policy 1-15

Develop and support policies to remove illegal encroachments into open space areas.

Policy 1-16

Review and update the city's vegetation management plan.

Policy 1-17

Consolidate weed abatement efforts underway by the City, Chino Valley Fire District, and San Bernardino County Weed Abatement.

Policy 1-18

Continue to require a one hundred foot perimeter around developed areas adjacent open space.

Facilities

Objective 2-1

Provide at least 5 acres of improved public park land per 1,000 residents (minimum 5 acres in size useable).

Policy 2-1

Provide local park facilities and recreation areas that are appropriate for the individual neighborhoods and communities in which they are located and that reflect the needs and interests of the population they serve.

Policy 2-2

Acquire, plan, develop, and staff facilities to make possible a wide variety of passive, active and organized recreation activities and opportunities to enrich the lives of the citizens.

Policy 2-3

Provide policies and standards which will enable the City to provide the local parks needed by 2013.

Policy 2-4

Accept for development as public park land only land that meets the standards recommended for development by the adopted Parks, Landscape and Open Space Standards Manual.

Policy 2-5

Ensure that all existing and future recreation facilities are accessible to everyone and consistent with the requirements of the Americans with Disabilities Act.

Policy 2-6

Within a particular recreation site the size, location, and design of various functions and facilities should be flexible, so as to adjust to population changes and to new program demands.

Policy 2-7

Provide adequate parking at each location when possible to minimize parking problems on residential streets.

Policy 2-8

Create recreation opportunities for residents through use of the trail network.

Policy 2-9

Park land dedicated to the City by developers of property shall meet or exceed the development standards established by the City.

Policy 2-10

Acquire and/or preserve diverse open spaces and provide for the advantageous use of these areas for recreation purposes and visual and spiritual enjoyment.

Policy 2-11

Preserve the historical, scenic, and cultural heritage sites of the community and its environs.

Objective 2-2

Develop several community centers in the City to provide focus areas for facilities and programs.

Policy 2-12

Provide multi-use facilities for the City's residents, including space for meeting rooms, athletic activities, kitchen facilities, and recreation classes and programs.

Policy 2-13

Locate the community centers where they are accessible to public transportation systems.

Objective 2-3

Develop a long term financial strategy for providing sufficient parks and facilities and a stable funding mechanism to provide for the on-going maintenance and operation of the park system when complete.

Policy 2-14

Evaluate expanding the area included within the City's Landscape and Lighting District.

Policy 2-15

Seek grant funding wherever available.

Objective 2-4

Develop an on-going program to monitor the City's parks, recreation, and open space needs in the future.

Policy 2-16

Prepare long- and short-term capital expenditure programs to finance the recommendations of the plan.

Policy 2-17

Regularly review priorities for acquisition, development and improvement of existing and proposed facilities and programs.

Policy 2-18

Review and evaluate on a regular basis established goals and priorities and assess progress of the Master Plan proposals.

Objective 2-5

Promote the cooperation of all private and governmental entities in achieving the acquisition, development and operation of park and recreation facilities and programs for the community.

Policy 2-19

Continue to foster good relations with the School District through the Joint Powers Agreement in the design and development of school facilities to achieve maximum public benefit.

Policy 2-20

Work with the School District to determine if the school buildings that are no longer used and no longer needed could be used for park and recreation activities.

Policy 2-21

Work with the School District to design and develop operations and maintenance facilities that will be used by the entire community, through specific agreements between City and the School District apportioning responsibilities.

Policy 2-22

Encourage individual and group participation in support and development of new park and recreation facilities and programs.

Policy 2-23

Expand the existing City volunteer program to provide needed recreation services in the City by recruiting high school and college students.

Policy 2-24

Work with equestrian groups to create equestrian facilities such as trail heads and an equestrian center and to develop a trail patrol and maintenance program.

Trails**Objective 3-1**

Plan, create and maintain a system of safe accessible trails on public lands within the city.

Policy 3-1

Provide a multi-use trail system that safely accommodates bicycles, hikers, and equestrians.

Policy 3-2

Integrate the planning for the trail network with the planning for streetscapes, parks, and open space.

Policy 3-3

Accept for development as public trails, only land that meets the standards recommended for development by the adopted Parks, Landscape and Open Space Standards Manual.

Policy 3-4

Require all new development to accommodate the trail Master Plan to provide multi-use trails and facilities within new projects.

Policy 3-5

Provide trail users with rest areas in parks and open space, including bike racks, hitching posts, water, shade and picnic facilities where appropriate.

Policy 3-6

Where possible, tie the open space and parks into the trail system.

Policy 3-7

Develop trail connections to Chino Hills State Park.

Policy 3-8

Develop trail heads or staging areas as a focal points for trail activities and to enhance access for those who must drive to the trail.

Policy 3-9

Whenever possible provide trail connections to regional trails and recreation facilities in adjacent communities.

Policy 3-10

Develop a signage system that identifies trails and provides users with information regarding the trail system. Identify safety regulations, interpretive opportunities and distance.

Policy 3-11

Provide maps and trail signage that identifies the multi-use trails as a system for bicycles, hikers, and/or equestrians.

Policy 3-12

Encourage use of the trail system through recreation programming, school field trips, and community awareness.

Policy 3-13

Provide a convenient trail system that promotes use of modes of transportation other than the automobile.

Policy 3-14

Mitigate impacts to residential homeowners adjacent to public trails through appropriate trail design.

Recreation Programs**Objective 4-1**

Improve the quality of life through the creative and constructive use of leisure time.

Policy 4-1

Enrich the cultural and creative life of the community through a diverse program of recreation opportunities for all ages and populations.

Policy 4-2

Recreational programs offered by the City shall be economically self-sustaining where possible.

Policy 4-3

Joint venture with programs offered privately in the City to further expand the scope of recreation program availability.

Policy 4-4

Develop methods, such as newsletters or recreation brochures, to market and increase awareness of and participation in community recreation programs.

Community Participation**Objective 5-1**

Strengthen community life by improving and enriching democratic values and increasing participation in civic activities.

Policy 5-1

Use newsletters and the local newspapers to notify residents of City activities and events.

Policy 5-2

Encourage continued community input throughout implementation of the Master Plan elements.

Policy 5-3

Include public participation in the design process for future park and facility development.

Aesthetic Environment**Objective 6-1**

Use parks to enhance the City's overall beauty including the quality of landscaping and landscape maintenance.

Policy 6-1

Locate parks and other recreation facilities for maximum visibility from surrounding streets.

Policy 6-2

Maintain all parks, trails, and open space to provide a pleasant and safe experience for users.

Policy 6-3

Promote use of drought tolerant and native plant material where appropriate in parks.

Policy 6-4

Maintain lighting levels suitable for safety as well as the nighttime use of community and city-wide facilities without undue glare impacts on nearby residential areas.

Policy 6-5

Develop identification signage for all parks that is consistent with the desired City image and complementary to any established theme in each park.

Policy 6-6

Develop a dedicated scenic pedestrian network throughout the City.

Resource Management**Objective 7-1**

Maintenance shall maximize safety of users, promote full enjoyment of the landscape, and protect the visual and environmental qualities of the landscape.

Policy 7-1

Visual unity and a high standard of quality shall be achieved through proper care of all landscape and hardscape material.

Policy 7-2

Trees shall be pruned as necessary to preserve visual access for pedestrians and vehicular traffic.

Policy 7-3

Protect and carefully maintain the landscape to foster its value for air pollution mitigation, fire safety, wildlife habitat and recreation activities.

Policy 7-4

Protect the native vegetation and wildlife habitat in the City's open space areas and preserve the wildlife corridors.

Policy 7-5

Continue a fuel modification program for the City's open space areas in order to protect private property from loss due to wildland fires.

Policy 7-6

All construction should meet adopted City landscape standards.

Policy 7-7

Cooperation between private and government agencies (Soil Conservation Service, California Conservation Corps, etc.) will ensure that the best management practices are utilized.

Policy 7-8

Parks shall regularly be reviewed by a group of professionals with diverse perspectives for safety items and risk management overview.

Policy 7-9

Design park facilities to minimize water use and maintenance demands.

Objective 7-2

Recognize the fundamental limits of resources, use these resources for the highest and best purposes, and do so without waste.

Policy 7-10

Save water, control maintenance costs, reduce trash, and economize wherever possible through design, construction and management without sacrificing the quality of the landscape.

Policy 7-11

Follow water conservation principles in all aspects of landscape maintenance including plant selection and development of irrigation systems.

Policy 7-12

Consider using reclaimed water for irrigation of City landscapes when this source of water becomes available.

Policy 7-13

Develop a program for recycling green waste from City sites.

D. PARKS, RECREATION AND OPEN SPACE MASTER PLAN

The proposed improvements to the park system are in direct response to the needs expressed by the community. The proposed park improvements are intended to initially alleviate current deficits and, on an incremental basis provide for the future recreation needs of Chino Hills residents through the year 2013. The greatest number of high priority needs in the community identified by the survey and the workshops are for recreation facilities that provide a community-wide benefit. Specific high priority items that serve a community-wide need included trails, swimming, field sports, and classroom activities. In addition, trails, swimming, and a recreation center were the top facilities listed for Recreation Facility Improvement needs.

Parkland

The Plan has established a standard of providing 5 usable acres of parkland for every 1,000 residents. This standard was developed after review of parkland standards established by the National Recreation and Park Association, State of California, and several cities in the region.

Table PROS-1 applies this standard of 5 acres per 1,000 people to the current population figures for 1993 as well as to the projected population figures for 1998, 2003, 2008 and 2013. The third column from the left indicates how many acres are required after applying the standard to the population figures.

The "Developed Parkland" column indicates that 102 acres of improved parkland currently exist in the City. The "Usable Undeveloped Parkland" column shows that the City currently owns 43 acres that it can develop.

**Table PROS-1
Parkland Standard**

Year	Population	Parkland Required (5 ac./1,000)	Developed Parkland	Surplus or <Deficit>	Useable Undev. Parkland	Surplus or <Deficit>
1993	48,000	240	102	<138>	43	<95>
1998	52,850	264.25	102	<162.25>	43	<119.25>
2003	57,700	288.5	102	<186.5>	43	<143.5>
2008	62,550	312.75	102	<210.75>	43	<167.75>
2013	67,400	337	102	<235>	43	<192>

In 1993, 240 acres of parkland are required. The City currently has only 102 acres of developed parkland resulting in a deficit of 138 acres. The City does have 43 acres of undeveloped parkland at this time. The number of undeveloped acres of parkland (43) applied toward the 1993 deficit of 138 acres results in a deficit of 95 acres. Therefore, aggressive park development will need to take place to meet even the immediate parkland needs. After meeting the current deficit for 1993, the City will need to acquire and develop an average of 24.25 acres of parkland every five years.

To meet the standard of 5 acres of developed parkland/1000 population, the City needs to aggressively pursue development of 138 acres of parkland to meet the current deficit. After meeting the current demands, it will be necessary to acquire approximately 4-5 acres of new parkland per year. Table PROS-2 outlines priorities to meet current and future parkland needs.

Park Facilities

Existing recreation facilities have been inventoried to provide a basis for understanding current and future needs in Chino Hills. School sites are included because their open space and sports fields provide recreation opportunities for Chino Hills' residents.

The park system currently has 27 park sites, 22 of which are developed into neighborhood and community parks. Figure PROS-1 shows the location of these park and recreation facilities.

Tables PROS-3 and PROS-4 list facilities at existing and future parks and schools and also indicates acreage figures for each existing and future park site. The acreage figures are separated into four categories--gross, developed, undeveloped, and usable. The greatest current facility needs are for sports fields, swimming pools, and trails.

Table PROS-2
Suggested Priorities to Meet Current and Future Parkland Needs

YEAR	DEFICIT	PRIORITY	PROPOSAL SEQUENCE	ACQUISITION	DEVELOPMENT	SUB TOTAL
1993-1997 48,000 pop	138 acres	1	1 Acquire Chino Hills Comm.Pk 2 Acquire Los Serranos 3 Improve Chino Hills Comm.Pk 4 Improve Los Serranos 5 Improve Chino Ave. 6 Acquire Carbon Canyon 7 Acquire Highway 71 8 Acquire Ramona Ave. 9 Improve Carbon Canyon 10 Improve Highway 71 Phase I 11 Future Park Sites	(40 acres) (17 acres) (5 acres) (84 acres) (10 acres)	50 acres 17 acres 12 acres 5 acres 37 acres 3.4 acres	50 67 79 84 121 124.4
1998-2002 52,850 pop ⁽¹⁾	162.25 ⁽²⁾	2	12 Improve Hwy 71 Phase II 13 Improve Grand Avenue 14 Improve Mystic Canyon		29 acres 13 acres 2.9 acres	153.4 166.4 169.3
2003-2007 57,700 pop ⁽¹⁾	186.5 ⁽²⁾	3	15 Improve Hwy 71 Phase III		18 acres	187.3
2008-2012 62,550 pop ⁽¹⁾	210.75 ⁽²⁾	4	16 Improve Ramona Avenue		8 acres	195.3
2013 67,400 pop ⁽¹⁾	235 ⁽²⁾	5	17 Acquire and Improve Soquel Canyon	40 acres	40 acres	235.3

(1) Utilizing an average population growth of 970/year, 4850 in each 5 year increment.

(2) Utilizing an increase of 24.25 average acreage for each 5 year increment.

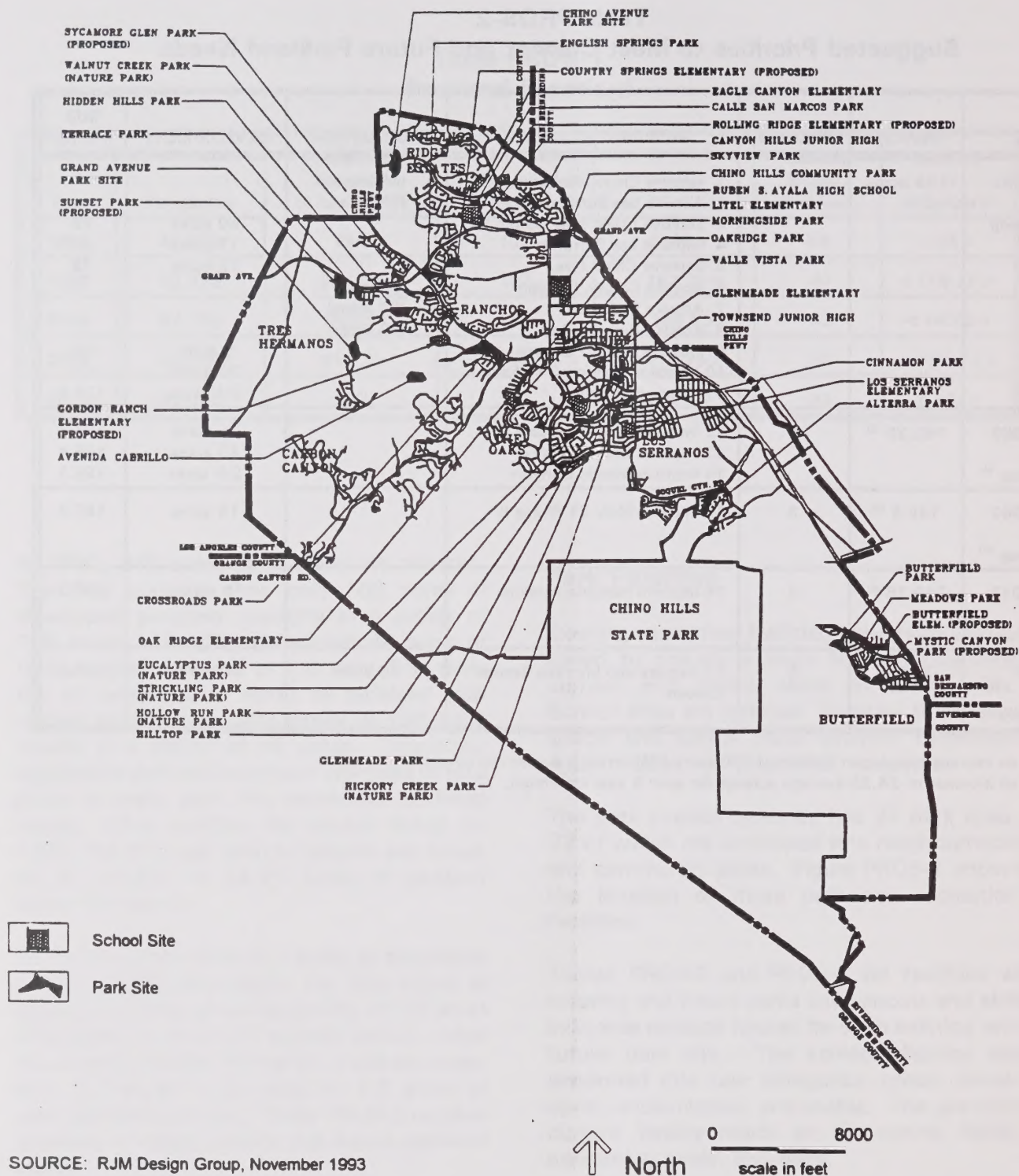


Figure PROS-1
Existing and Proposed
Park and Recreation Facilities

Table PROS-3 City of Chino Hills Community Facilities - Parks

	GROSS ACREAGE	DEVELOPED ACREAGE	UNDEVELOPED USABLE ACREAGE	USABLE ACREAGE	TOTLOT	SWIMMING POOL	TRACK/ FIELD	PICNIC TABLES	BASKETBALL	SOCCER/ FOOTBALL (2)	BASEBALL (2)	PAR COURSE	VOLLEYBALL	CLASSROOMS	TENNIS	RAQUETBALL	RESTROOM	PARKING SPACES	LIGHTS	BARBEQUE	TETHERBALL	AMPHITHEATRE	SHADE/ PICNIC
PARKS:																							
ALTERRA	10.5	3.7		3.7	1		7	1H									1	12-2H	Y	4			1
AVENIDA CABRILLO	6.3	4.9		4.9	2		6	1H			1				4		1	9-1H	Y	5			3
BUTTERFIELD	22.7	13.5		13.5	1		10	1F				2						46-2H					
CALLE SAN MARCOS	3.2	3.2		13.2	1			1F				1						11-2H					
C.H. COMMUNITY	23.0	13.0	10.0	23.0			23			2 (3)	4							136-4H	Y	3			
CINNAMON	5.2	4.2		4.2	1		1					1							Y				
CROSSROADS	26.9	12.8	1.6	14.4	1		6	1F			1				2		1	72-4H	Y	4			1
ENGLISH SPRINGS	11.8	8.2		8.2	1		12	2H			1	1					1	25-1H	Y	4			3
EUCALYPTUS (1)	7.5																						
GLENMEADE	3.2	3.2		3.2	1							1							Y	2			
HICKORY CREEK (1)	7.4				1		1																
HIDDEN HILLS	9.9	3.5		3.5	1		11	2H									1	17-1H	Y	3			
HILLTOP	6.4	6.4		6.4	1		1																
HOLLOW RUN (1)	12.7																						
MEADOWS	10.6	9.5		9.5																			
MORNINGSIDE	6.0	3.5		3.5			3																
OAKRIDGE	6.1	3.7		3.7	2		6			1								10-1H					
SKYVIEW	5.7	6.1		5.1	2		2	2H				1											
STRICKLING (1)	13.1				1																		
TERRACE	2.8	2.1		2.1	1		3	1H											Y				
WALNUT CREEK (1)	4.1																						
VALLE VITSA	3.4	1.7		1.7	1		3													3			
SUBTOTAL:	208.5	102.2	11.6	113.6	19		95	7.5F	4	4	3	7		6		5	340-18H		23				8
FUTURE PARKS:																							
CHINO AVENUE	119.1		12.0	12.0																			
GRAND AVENUE	44.8		13.0	13.0																			
MYSTIC CANYON	2.9		2.9	2.9																			
SUNSET	107.8		3.1	3.1	1		8	1H									1						
SYCAMORE GLEN	0.5		0.3	0.3	1		2																
SUBTOTAL:	275.7		31.3	31.3	2		10	1H									1						
TOTAL:	484.2	102.2	42.9	145.1	21		115	8.5F	4	4	3	7		6		6	340-18H		23				8

(1) INDICATES NATURE PARK. THE ACREAGE FOR THESE PARKS ARE INCLUDED ONLY IN THE GROSS ACREAGE COLUMN BECAUSE THESE SITES DO NOT MEET CURRENT CITY DESIGN STANDARDS.

(2) THIS FACILITY INVENTORY INCLUDES ONLY THOSE SOCCER/FOOTBALL AND BASEBALL FIELDS THAT MEET MINIMUM STANDARDS FOR SAFE PLAY.

(3) THE TWO SOCCER FIELDS IN CHINO HILLS COMMUNITY PARK ARE OVERLAY FIELDS ON THE BASEBALL OUTFIELDS.



Table PROS-4 City of Chino Hills Community Facilities - Schools

	GROSS ACREAGE	DEVELOPED ACREAGE	UNDEVELOPED ACREAGE	USABLE ACREAGE	TOTLOT	SWIMMING POOL	TRACK/ FIELD	PICNIC TABLES	BASKETBALL	SOCCER/ FOOTBALL	BASEBALL	PAR COURSE	VOLLEYBALL	CLASSROOMS	TENNIS	RAQUETBALL	RESTROOM	PARKING SPACES	LIGHTS	BARBEQUE	TETHERBALL	AMPHITHEATRE	SHADE/ PICNIC
SCHOOLS:																							
CANYON HILLS JR. HIGH									10F	2	1						1		Y				
EAGLE CANYON ELEM.				2					3F/1H		1			1			2		Y		7		
GLENMEADE ELEM.				2					4F		1		3				1		Y		9		
LITEL ELEM.				2					4F	1	2		2				2		Y		9		
LOS SERRANOS ELEM.				2					3F	1	2 (4)		2				4		Y		9		
OAK RIDGE ELEM.				1					2F	1	2						2		Y		10		
RUBEN S. AYALA H.S.						1	1		8F	3	4		4		6		1		Y				
TOWNSEND JR. HIGH									9F/2H	2	3	1	7	1					Y				
SUBTOTAL:				9	1	1			44.5F	10	18	1	18	2	6		13				44		
FUTURE SCHOOLS:																							
BUTTERFIELD ELEM.									2F	1	2		3								6		
GORDON RANCH ELEM.									2F	1	2		2								6		
COUNTRY SPRINGS										1	2		3										
ROLLING RIDGE ELEM.										1	2		3										
SUBTOTAL:									4F	4	6		11								12		
TOTAL:				9	1	1			48.5F	14	29	1	29	2	6		13				56		

(4) ONE BASEBALL FIELD AT LOS SERRANOS ELEMENTARY INCLUDES FIELD LIGHTS.

Chino Hills State Park is adjacent to the southern and western boundaries of the City. This park provides unique recreation opportunities for Chino Hills' residents, and the ridges and hillsides of the State Park and the City's open space contribute to the City's unique character.

Community Parks

Sports Fields and swimming pools are destination oriented facilities and best located in a community park that typically encompasses a larger area and is easily accessible along a major arterial.

The majority of the facility improvements are proposed for community park sites.

The plan proposes expanding the existing Chino Hills Community Park and adding four new community parks to the City's park system. The five community parks will be dispersed throughout the City to provide the residents with access to sports fields and special use facilities. Each community park

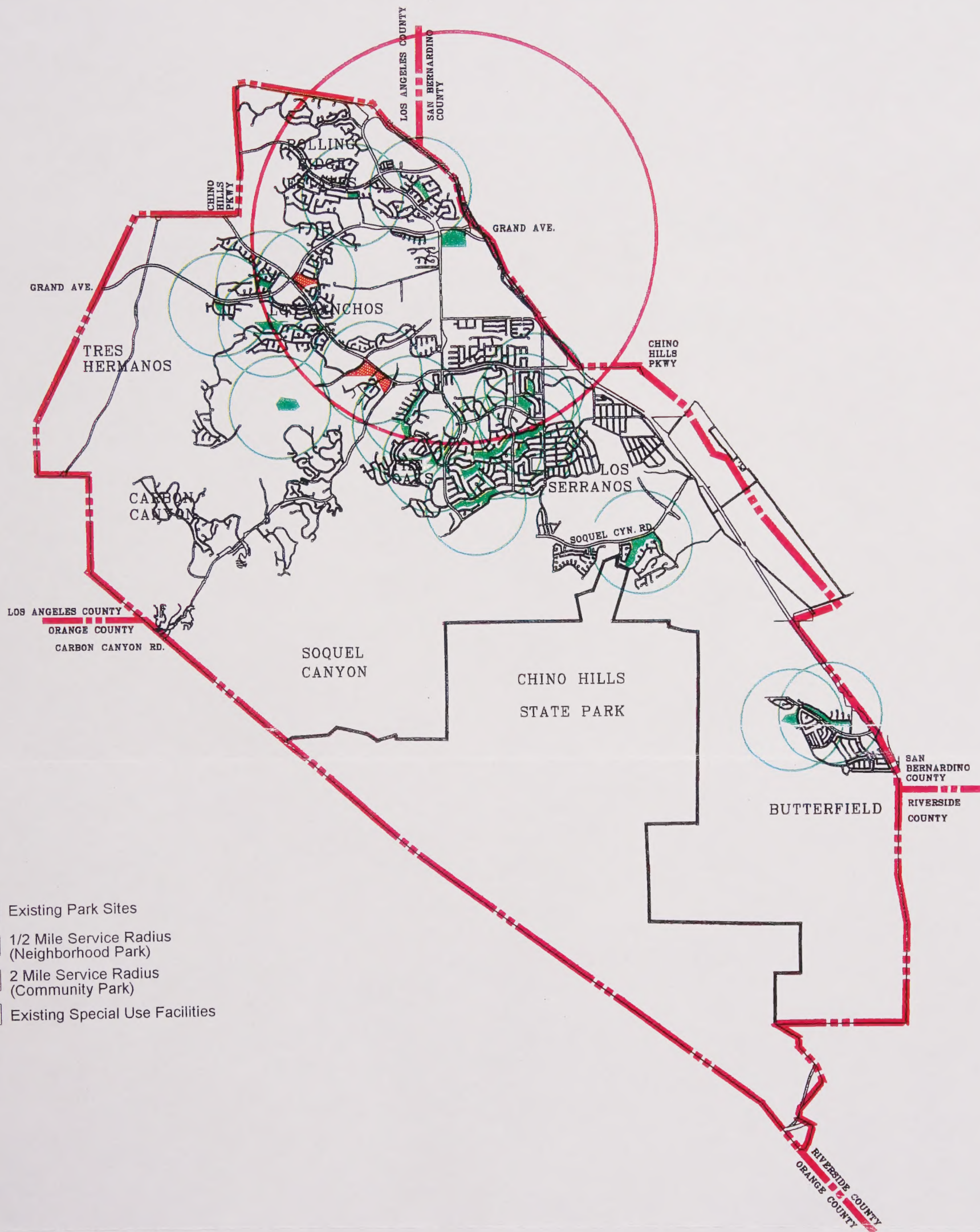
will have a focus that reflects the location, site characteristics, and proposed facilities. See Figure PROS-2, Proposed Park Improvements.

Neighborhood Parks

The "proposed" neighborhood parks will provide a variety of active and passive recreation opportunities. These parks are intended to serve the immediate neighborhood and also provide much needed recreation oriented facilities for the entire community.

Existing neighborhood parks are not well distributed. The newer residential areas have an oversupply of small neighborhood parks. (see Figure PROS-3, Existing Park Facility Service Area Radius Map). The older residential areas have a significant lack of recreation facilities. Therefore the plan proposes three new neighborhood parks: one serving the Carbon Canyon area (specific site undetermined), one serving Los Serranos, and one at the proposed park site on Chino Hills Avenue in the Rolling Ridge area.





SOURCE: RJM Design Group, November 1993

North
0 6000
scale in feet

Figure PROS-3
Service Radii-
Existing Parks

Existing City Parks

Improvements are proposed for many existing City park sites. Throughout the network of existing neighborhood parks, sports fields, hard court games, interpretive opportunities, provisions for view enhancement, play equipment, site furniture, and covered group picnic opportunities should be distributed to make each type of recreation experience available for all residents. Top priorities for facility development at neighborhood parks are:

- Sports fields and courts (baseball, softball, soccer, football, and basketball practice facilities)
- Picnic facilities with barbecues and shelters
- Tot lots and playgrounds
- Signage/thematic components
- Security Lighting

The emphasis on sports fields is due to community input. A large number of teens and youth participate in youth sports organizations. The City is currently lacking adequate field space to meet the current need, and future growth is anticipated in all youth sports.

Organized sports fields and facilities are proposed for destination oriented locations rather than the existing neighborhood parks. Recommended locations for organized sports fields are at proposed community parks, the expansion area for Chino Hills Community Park, proposed Los Serranos and Chino Avenue park sites. These sites have ample flat usable land and are easily accessed.

Schools

The Joint Powers Agreement between the Chino Unified School District and the City provides a great opportunity for providing needed recreation facilities in the City. The schools currently provide needed ballfields. These joint use opportunities should continue to be pursued by the City.

Park Classifications

The following discussion of park classifications establishes a hierarchy of parks within the community devoted to meeting the recreational and cultural need of its residents. Classification into park type is based on use, function, and size.

This system of park organization includes community parks, neighborhood parks and special use facilities. The terms community and neighborhood park include any area of land dedicated to the public and improved for recreational use. (See Table PROS-5, Description of Park Types for the City of Chino Hills).

Community Parks

Currently, the City's park system includes one Community Park Facility: Chino Hills Community Park. Four additional community park facilities have been designated, one for each section of the City.

Neighborhood Parks

Currently, the City's developed Neighborhood Parks include: 20 park sites and 5 undeveloped nature parks. Three new park sites have been designated to provide neighborhood recreational opportunities in the Carbon Canyon, Los Serranos, and Rolling Ridge areas.

Special Use Facilities

Special Use Facilities are designed to meet the requirements of specific recreational, social and cultural activities. Examples of this type of facility are: Community Center, Library, Senior Center. The function of these facilities goes beyond the primary purpose of serving a single neighborhood/community park facility.

Because the demographic makeup of the City will change over time, the City shall conduct continuous research and assessment to ensure that those facilities provided are adequate.

The City shall also develop Special Use Facilities and programs that can be adapted to the changing recreational needs of the population. The number of Special Use Facilities shall be increased to accommodate the recreational demands of the growing community. Through the special use facilities, in addition to recreational programs, the senior citizen program of comprehensive, coordinated serves will be maintained and strengthened to meet citizens' needs.

Trails

Walking/hiking and bicycling were the number one and number two rated recreational activities in Chino Hills, according to the parks survey. These activities along with horseback riding, rated number __, highlight the importance of the trail system in the city.

The purpose of the trail system is to provide access to parks and open space areas within Chino Hills as well as access to the State Park (see Figure PROS-4). Where possible, new parks in the City will include trails and trail heads. The network of trails will also connect to regional trails and local trails in adjacent cities and counties. Regional trails that will tie into the Chino Hills trail system include the Schabarum Trail in Los Angeles County near Tres Hermanos and the Santa Ana River Trail in Orange County near the southeast boundary of the City. Trails in adjacent cities will also tie into the City's trail system including Brea's trail along Carbon Canyon Road, Chino's San Antonio Creek Trail parallel to Chino Valley Freeway and Diamond Bar's trail near Tres Hermanos.

Multi-Use Trails

All of the trails addressed in the Master Plan are multi-use trails available for hiking, biking, and/or horseback riding, although in certain circumstances some trails could be designated for exclusive bike or equestrian use. The design characteristics of the existing trails vary considerably providing a wide variety of trail experiences. Portions of some trails are paved, while others are compacted soil. Trail width also varies depending on topography and available space. On-street bike trails are addressed in the Circulation Element of the City's General Plan.

Two major trail spines form the critical framework of the trail system. One major spine runs from the Rolling Ridge Estates area in the north to the State Park in the south. The second major spine, the Eucalyptus Trail, runs from Tonner Canyon in the west to Chino Valley Freeway in the east and continues southward in a loop to the east entry of the State Park. The north/south portion of this trail east of Chino Valley Freeway is actually located in the City of Chino. The remaining trails feed into these spine trails. The first priority for trail development will be construction of the undeveloped spine trails. The second priority will be completion of the feeder trails. Figure PROS-4 shows existing and proposed trails in the City. Proposed trails includes some that have been approved by the City and trails that are pending approval.

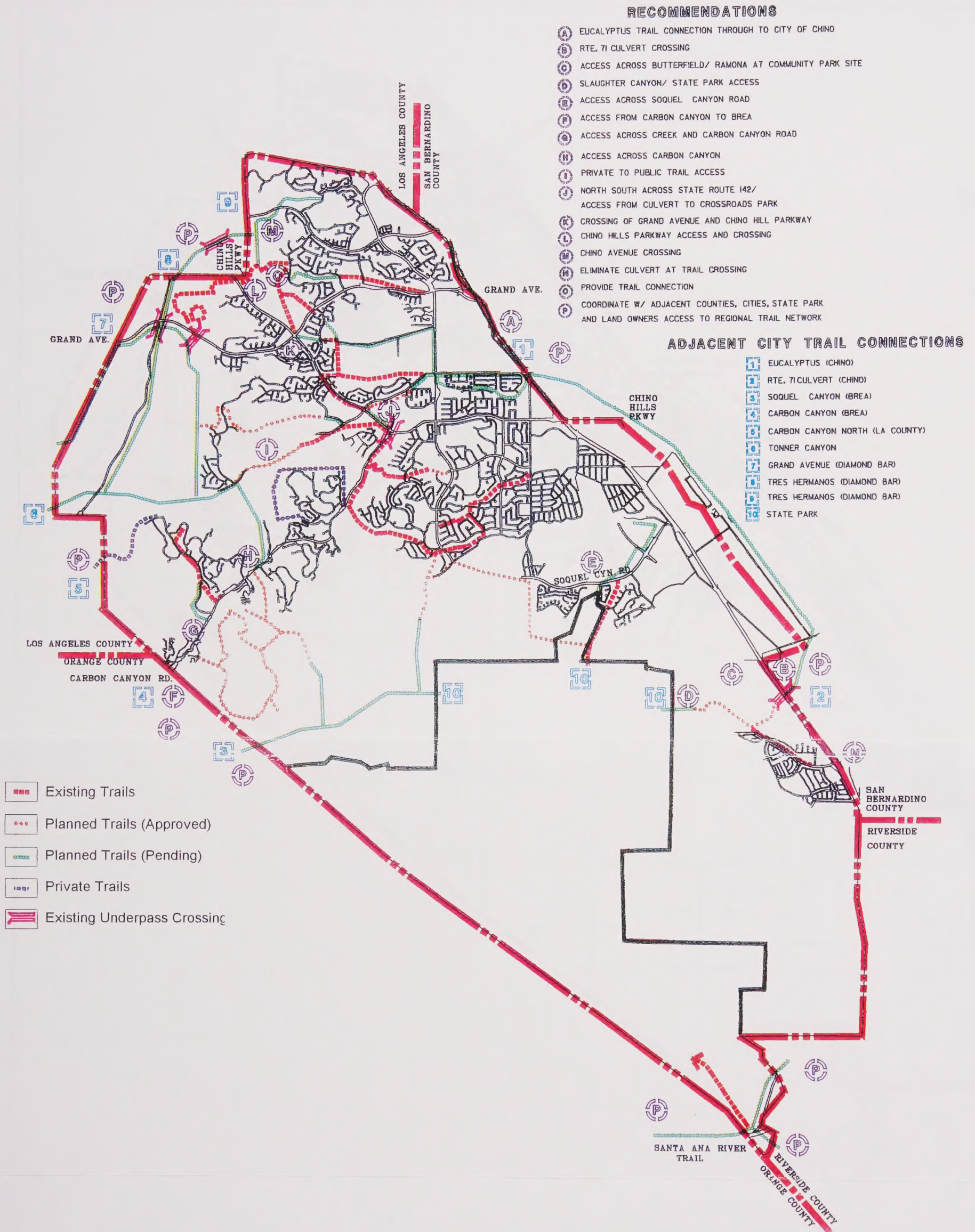
New trails will be designed in a way to minimize impact on the land. The city's trail standards are:

**Table PROS-6
Trail Design Standard**

Width	Minimum 15 ft. ⁽¹⁾
Slope	Maximum gradient of 5% ⁽²⁾
Trail Surface	Depends on location (asphalt, decomposed granite, or compacted native soil.)

⁽¹⁾ Except where negative impacts on the land would result.

⁽²⁾ Steeper grades are acceptable for short sections of trails.



SOURCE: RJM Design Group, November 1993

North
0 4000
scale in feet

Figure PROS-4
Existing and Proposed Trails

Open Space

Softly rounded and steeply sloped hillsides along the southern and western boundaries of Chino Hills contribute to the unique character of the City and provide a valuable buffer between the City of Chino Hills and adjacent communities. The hills, in conjunction with the spectacular views to the north and east of the San Gabriel and San Bernardino Mountains, create the impression of a City embraced and protected by landform. This impression is further enhanced by the open and undeveloped nature of the hillsides throughout the City.

Approximately 1,600 acres of these hillsides along with other parcels in the City are dedicated as open space lands as shown in Figure PROS-5. In addition, Chino Hills State Park, located south of the City, provides many more acres of State-owned open space. Prado Dam and Flood Control Basin are located across the Chino Valley Freeway to the southeast. Based on the results of the phone survey and the

community workshops, the residents of Chino Hills place a high priority on protecting these lands now and in the future in order to maintain the rural character of the City.

Open space lands in Chino Hills are lands that are dedicated as permanent open space and will not be utilized for commercial, industrial, or residential development. Manufactured slopes created as part of the grading for development are not considered open space lands. Open space lands are typically undisturbed natural hillsides, ridges, valleys, and water courses that have aesthetic and environmental qualities that enhance the image and quality of life in Chino Hills.

Four main issues--preservation/restoration, management, recreation, and revenue generation--are the focus of the discussion presented here. Due to citizen input the top priority is preservation, but the open space lands also include management responsibilities as well as provide unique opportunities to meet some of the recreation needs of the residents.

Preservation/Restoration

Areas that have the most environmental sensitivity, such as water courses, ridgelines, wildlife corridors, native vegetation, and cliffsides, must be identified and protected from disturbance because they provide habitat for wildlife. In order to maintain the health of the ecosystem, large scale contiguous natural areas must be dedicated and protected to ensure biological diversity. Areas of scenic value that are visible from the City must also be protected. Valuable natural resources on private property should be protected through City policies such as a tree preservation ordinance.

Natural Communities Conservation Planning (NCCP)

The City of Chino Hills and the adjacent State Park have one of San Bernardino Counties most significant coastal sage scrub communities. As such, the discussion of open space preservation would not be complete without a brief summary of recent legislation and current planning activities regarding N.C.C.P.

A NCCP Plan is intended to provide for the establishment of permanent multi-species preserves, including corridors and linkages with other natural lands, as well as allow for compatible and appropriate land development and economic growth. Creation of a NCCP Plan is intended to be a collaborative effort between local governments, environmental groups, developers, the California Department of Fish and Game and the U.S. Fish and Wildlife Service.

The Coastal Sage Scrub (CSS) NCCP Program is the first NCCP Planning effort initiated under the NCCP Act. The CSS NCCP Program is a pilot program intended to develop a process of conservation planning at a regional scale that will serve as a model for the NCCP process throughout the State. The coastal sage scrub community was selected as the focus of the first NCCP planning effort in part as a result of the Federal listing of the coastal

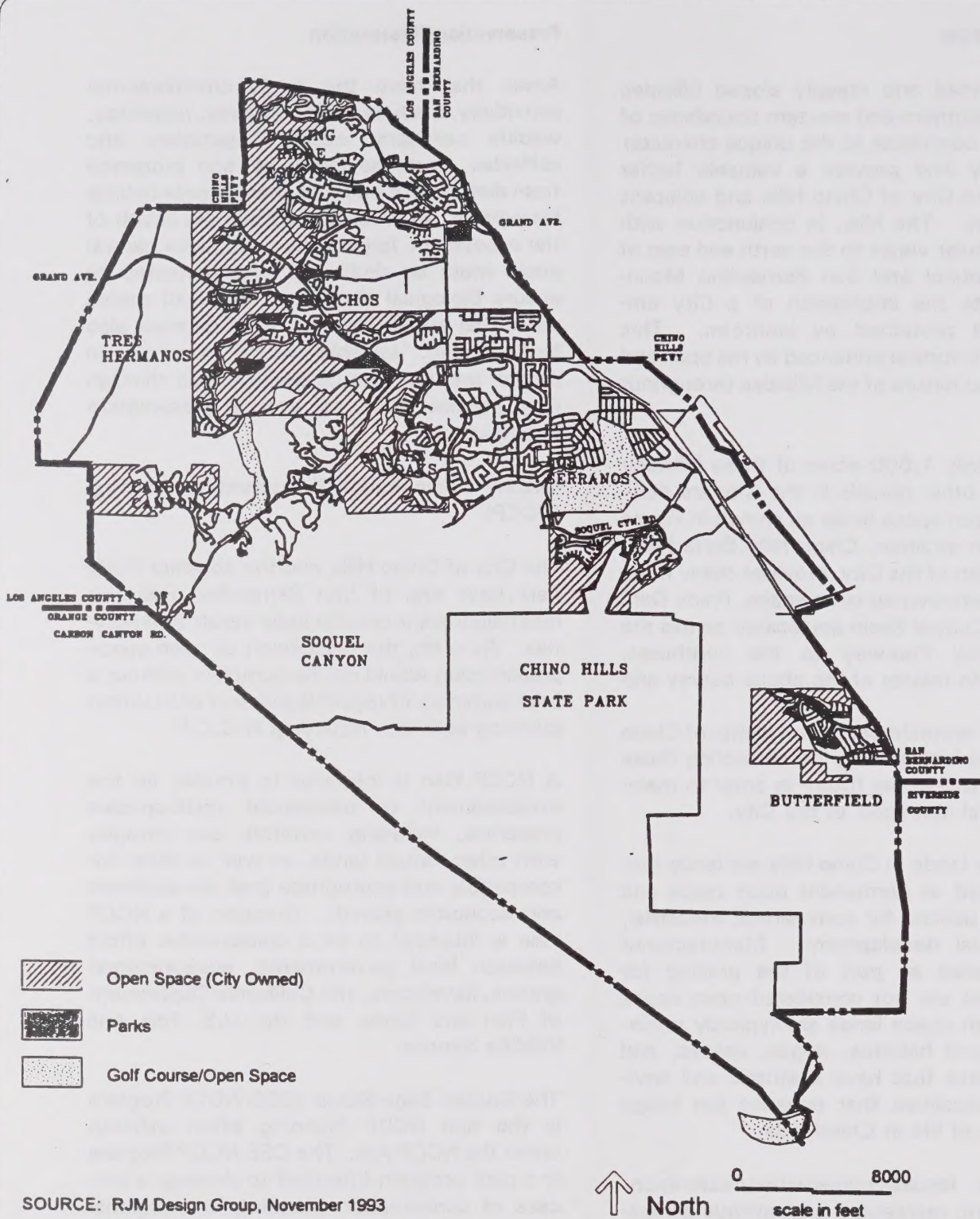


Figure PROS-5
Open Space

California gnatcatcher, as an endangered species and the intense pressure for urban development within its range.

Whether the City of Chino Hills becomes involved in the CSS NCCP effort or not, it should review and evaluate the NCCP conservation guidelines in preparing a Resource Management Plan for its open space areas.

Management

The City's management responsibilities regarding open space include identifying the most appropriate uses for the open space lands and determining the economic consequences of each land use decision. Management will also entail developing strategies for revegetation and building on existing City programs for fire management and fuel modification.

All areas eroded or disturbed due to natural or man-made activities should be revegetated with material that occurs naturally in the area under the guidance of a specialist in this area. Native vegetation on steep slopes may prevent erosion as well as mud and land slides that could cause damage to the developed areas of the City.

Degraded open space areas could potentially be traded for privately owned parcels of land that have more environmental significance. This land trade could be especially viable if the degraded landscape is suitable for some type of development.

The existing Chino Hills fire management plan and fuel modification program should be reviewed and updated as part of a comprehensive resource management program in order to protect developed areas in the City from wildland fires that may start in the hills. This document might be used as a basis for dealing with the build up of fuel generated by the native vegetation.

Recreation

Another purpose and use for the open space lands is recreation. One recreation use that is consistent with the rural character of the open

space is extension of the existing multi-use trail system. Staging areas and new trails could provide easier access to the State Park as well as access other open space areas that have scenic and interpretive value. Interpretive signage along the trails and in rest stops can inform trail users of the natural elements of the landscape and can become destination spots during outings for school children. Trails should be developed with minimum disturbance of the natural landform and vegetation.

Other recreation uses in the open space lands may require more disturbance of the natural landscape, yet some existing areas may already be in poor condition. Converting open space lands to active recreation areas will be a way to improve these degraded lands, but any structures or other improvements built in these areas shall be constructed with natural building materials and colors that blend with the native landscape.

Revenue Generation

In order to have the financial means to develop and maintain a full service park and recreation system in Chino Hills, the City must find new sources of revenue. Although the existing Landscape and Lighting District in the City does currently provide some funds for maintenance of open space, the open space lands themselves may provide an opportunity to generate revenue through agricultural as well as recreational uses. Some possible agricultural uses include cattle grazing, orchards, and wood production. All of these proposed uses will have impact on the integrity of the landscape and may preclude use of the land for recreational purposes. While cattle grazing may be beneficial in areas where fuel buildup is great, it is detrimental in oak woodlands because the cattle could reduce the number of new oaks by eating the seedlings and compacting the soil. In areas where cattle are grazing, access for people should be restricted for safety reasons.

Determining the suitability of specific parcels of open space for particular uses is beyond the scope of this General Plan. The city needs

to develop a comprehensive Resource Management Plan for the open space lands in order to better understand the value and characteristics of each area of open space. With this understanding, the City can identify the most appropriate uses for the open space.

All aspects related to the open space lands must be considered together. The value of these lands are certainly related to their scenic quality, but also include their natural resources and recreation potential. Preservation of the land protects these valuable qualities. Managing these resources and providing safe recreation facilities in open space areas will put a drain on the City's finances; therefore, appropriate methods for creating revenue sources in the open space is an essential consideration. Every decision made regarding open space must be made with the understanding of the impacts on the land, the community, and the City's budget.

Recreation Programs

Recreation programs are an important service that the City of Chino Hills can provide for its citizens. During 1992 the Community Services staff offered a series of summer Concerts in the Park and several holiday events. In Spring 1993 the City hired its first Recreation Supervisor, providing the needed focus for developing a strong recreation program over the next few years. The City distributed its first recreation brochure for Summer 1993 activities.

In order to develop a successful recreation program in Chino Hills, multi-purpose rooms and classrooms for recreational programs need

to be developed. In the short term, the City's best opportunity for addressing the immediate need is to acquire portable classrooms no longer needed by the School District. Portables at Butterfield Elementary and Rolling Ridge Elementary may become available for recreation use this year. In the long term, the proposed community centers will provide the ideal location for all types of programs.

Another step for increasing program offerings is expanding the City's recreation staff. There is a possibility that an additional recreation staff person will be hired in 1994 to support the efforts of the recreation supervisor.

Funding is another important aspect of recreation programs. Due to the great need for tax dollars going toward facility development, most programs must be supported by user fees. Scholarship programs for those not able to pay fees may be developed by the City. Grant funds from State and Federal agencies may be available for some activities, such as a lunch program for older adults.

The City has the potential for teaming up with various individuals and groups who want to help in offering programs. The Sheriff's Department has expressed interest in offering programs in concert with the City to benefit children. Other groups, such as the Fire Department and Kiwanis, have already worked with the City to develop special events. Individuals may be interested in teaching recreation classes, such as trail etiquette and animal science. Volunteerism is thriving in Chino Hills, and tapping into these resources in the City will help achieve the programs desired by residents at the earliest possible date.

A. Introduction

The noise element is a key component of the noise assessment process. It is used to identify and quantify the noise sources and their impacts on the environment.

There are several types of noise sources that can be identified and quantified. These include traffic noise, industrial noise, and residential noise. Each type of noise source has its own characteristics and impacts on the environment. The noise element is used to identify and quantify these noise sources and their impacts on the environment.

The noise element is also used to identify and quantify the noise impacts on the environment. This includes the noise levels in the environment, the noise levels in the buildings, and the noise levels in the people. The noise element is used to identify and quantify these noise impacts and their effects on the environment.

Purpose of the Element

The purpose of the noise element is to identify and quantify the noise sources and their impacts on the environment. This includes the noise levels in the environment, the noise levels in the buildings, and the noise levels in the people. The noise element is used to identify and quantify these noise impacts and their effects on the environment.

- Identifying the sources of noise
- Identifying the impacts of noise
- Identifying the noise levels in the environment
- Identifying the noise levels in the buildings
- Identifying the noise levels in the people

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Identifying the Sources of Noise

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Chapter 7 Noise Element

A. INTRODUCTION

The urban environment contains a variety of noise sources which can affect the way people live and work.

Some types of noise are only short-term irritants, like the pounding of a jackhammer or the whirring rattle of a lawnmower. These noise sources generally can be controlled through City noise regulations, such as a noise ordinance. Other noises, such as freeway noise, may be more permanent fixtures in the community, and may pose long-term health hazards to community residents.

Transportation is a primary contributor to long-term noise within a community. Many requirements focused at reducing the number of trips generated are included in the Circulation Element's discussion of transportation demand management measures. These measures will directly influence the amount of noise generated from transportation modes in Chino Hills.

Purpose of the Element

In recognition of the fact that excessive or unusual noise can have significant adverse impacts on human health and welfare, the State of California has developed definitive guidelines for determining community noise levels and for establishing programs aimed at reducing community exposure to noise levels defined to be adverse. The purpose of this Noise Element is to identify noise levels, and to establish policies and programs designed to minimize the effects of noise on people living and working in Chino Hills. Toward this end, this element focuses on:

- Reducing the exposure of existing residences, schools, parks, libraries, and community centers to transportation noise;

- Minimizing the number of new residences constructed within areas of high noise levels or incorporating measures to reduce noise exposure (i.e., double paned windows, fully air conditioned space to allow for year-round closure of windows, etc.);
- Establishing guidelines for new construction along roadways where noise may be a problem; and
- Identifying, mitigating, and reducing intermittent or short-term noise.

Scope and Content

Excessively high noise levels endanger the public's health and welfare. This Element addresses how noise levels can be contained within safe parameters in two sections: Issues Identification, and Goals and Policies. The Issues Identification section defines noise, establishes safety standards, and identifies noise sources in Chino Hills. These issues are addressed by goals and policies.

Related Plans and Programs

Several local, state, and federal laws regulate point source noise and establish standards for protecting community residents from excessive noise.

City of Chino Hills Noise Ordinance: The City has adopted a noise ordinance as part of the City's Development Code, which establishes ambient noise standards for all property within various noise zones.

State Noise Insulation Standards: Appendix Chapter 35 of Title 24 of the California Code of Regulations sets forth requirements for the

insulation of multiple-family and single-family residential dwelling units from excessive and potentially harmful noise. The State indicates that locating units in areas where exterior ambient noise levels exceed 65 dB CNEL is undesirable. Whenever such units are to be located in such areas, the developer must incorporate into building design construction features which reduce interior noise levels to 45 dB CNEL.

State Noise Standards: Section 65302 of the State Resources Code requires the General Plan to recognize the guidelines established by the Office of Noise Control in the State Department of Health Services.

B. NOISE ISSUES

This section identifies issues relating to noise sources and established noise standards.

Definition of Noise

Noise is generally defined as "unwanted" or "intrusive" sound. The characteristics of noise are difficult to describe by a single unit of measurement because noise has many components, such as loudness, pitch, and duration.

Scientists have developed the A-weighted decibel scale (dBA) as a noise descriptor incorporating a frequency response which reflects human judgement of the loudness of environmental noise. This scale is widely used to indicate the loudness level of a particular sound or noise environment at a given point in time. The maximum A-weighted noise level is often used to represent the noise level of a single noise event, such as a dog barking, or a vehicle passing by.

The urban sound environment is made up of a large number of such noise events over a day or year. These noise events vary widely in noise level over time, and include such sources as lawn mowers, traffic, sirens, air conditioners, nearby or distant aircraft overflights, people's voices, dogs barking, birds chirping and other noises. In order to compare noise

environments which vary from time to time, measures of the noise environment which average the A-weighted noise level over a 24-hour period are widely used. Such measurement scales have been found to correlate well with human response to the overall noise environment for most normal sources of transportation and environmental noise. These noise levels represent the constant noise level that would result if the total sound energy received over the averaging period (usually an hour or 24-hour day) were spread out equally for the entire period. These noise levels therefore increase both with the number of individual noise events, and with the noise level associated with each noise event. The two such measurement scales commonly used in California are the Community Noise Equivalent Level (CNEL) and day-night level (L_{dn}). In order to account for increased human sensitivity to noise at night, the CNEL level includes a 5-decibel penalty on noise during the 7 pm - 10 pm time period and a 10-decibel penalty on noise during the 10 pm - 7 am time period. the L_{dn} level includes only the 10-decibel weighting for late-night noise. For practical purposes, these values are nearly identical for all but unusual noise sources.

Certain types of noise, such as human voices, pure tones, warbling alarms, impulsive noises, and noises that are perceived as unnecessary, are more annoying than one would expect from their A-weighted sound level alone, and require special consideration when standards for acceptable noise level are established.

Noise Standards

To aid City decision makers with the establishment of noise standards, federal and state agencies have established noise/land use compatibility guidelines, see Table N-1. These guidelines are all based upon cumulative noise criteria such as L_{eq} (equivalent noise level), CNEL, or L_{dn} .

The State Department of Housing and Community Development has established mandatory noise guidelines for single-family and multiple-family residential construction. New multiple-family units cannot be exposed to

**Table N-1
Noise/Land Use Compatibility Matrix**

LAND USE CATEGORIES		COMMUNITY NOISE EQUIVALENT LEVEL CNEL						
CATEGORIES	COMPATIBLE USES	<55	60	65	70	75	80>	
RESIDENTIAL	Single-Family, Duplex, Multiple Family	A	B	C	C	C	D	D
RESIDENTIAL	Mobile Homes	A	B	C	C	C	D	D
COMMERCIAL Regional, District	Hotel, Motel, Transient Lodging	A	A	B	B	C	C	D
COMMERCIAL Regional, Village District, Special	Commercial Retail, Bank, Restaurant, Movie Theater	A	A	A	B	B	B	C
COMMERCIAL INDUSTRIAL INSTITUTIONAL	Office Building, Research and Development, Professional Offices, City Office Building	A	A	A	B	B	C	D
COMMERCIAL Recreation INSTITUTIONAL Civic Center	Amphitheater, Concert Hall Auditorium, Meeting Hall	B	B	C	C	D	D	D
COMMERCIAL Recreation	Children's Amusement Park, Miniature Golf Course, Co-cart Track; Equestrian Center, Sports Club	A	A	A	B	B	D	D
COMMERCIAL General, Special INDUSTRIAL, INSTITUTIONAL	Automobile, Service Station, Auto Dealership, Manufacturing, Warehousing, Wholesale, Utilities	A	A	A	A	A	B	B
INSTITUTIONAL General	Hospital, Church, Library, Schools Classroom	A	B	B	C	C	D	D
OPEN SPACE	Parks	A	A	A	B	C	D	D
OPEN SPACE	Golf Course, Cemeteries, Nature Centers, Wildlife Habitat	A	A	A	A	B	C	C
AGRICULTURE	Agriculture	A	A	A	A	A	A	A

**ZONE A
CLEARLY COMPATIBLE**

Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction without any special noise insulation requirements.

**ZONE B
NORMALLY COMPATIBLE**

New construction or development should be undertaken only after detailed analysis of the noise reduction requirements are made and needed noise insulation features in the design are determined. Conventional construction, with closed windows and fresh air supply systems or air conditioning, will normally suffice.

**ZONE C
REQUIRES ANALYSIS
AND MITIGATION**

Potential noise impacts exist. If new construction or development is proposed, a detailed analysis of noise reduction requirements must be made and needed noise insulation features included in the design.

**ZONE D
CLEARLY INCOMPATIBLE**

New construction or development should generally not be undertaken.

Source: Cotton/Beland/Associates, Inc.

outdoor ambient noise levels in excess of 65 dB (CNEL or L_{dn}), and sufficient insulation must be provided to reduce interior ambient levels to 45 dB CNEL.

The city's Development Code contains standards which establish noise limits within the city.

Identification of Noise Sources

This section contains a general description of the noise environment in the City of Chino Hills.

The sources of noise in Chino Hills fall into four basic categories. These are transportation noise, stationary noise sources, amplified noise, and construction noise.

Transportation Noise: The most common sources of noise in developed areas are transportation related noise sources. These include automobiles, trucks, motorcycles, railroads, and aircraft. Motor vehicle noise is of concern because of its high number of individual events which often create a sustained noise level and its proximity to areas sensitive to noise exposure.

State Highway 71 is the single greatest noise generator in the city.

The City of Chino Hills is bisected by several arterial roadways. Carbon Canyon Road, Chino Hills Parkway and Grand Avenue are the primary arterial roads in the city, carrying local and regional traffic. Other major arterials, which generate potentially adverse traffic noise include Ramona Avenue, Soquel Canyon Road, Peyton Drive, Pipeline Avenue, and Chino Avenue.

Stationary Noise Sources: Stationary noise sources generally include such uses as sewage treatment plants, oil production or other resource recovery operations, heavy industrial, etc. The Aerojet Munitions Factory testing of ordinance results is low frequency "booms" which can be heard throughout the city. These explosions occur on an infrequent basis during the day. Mechanical equipment on

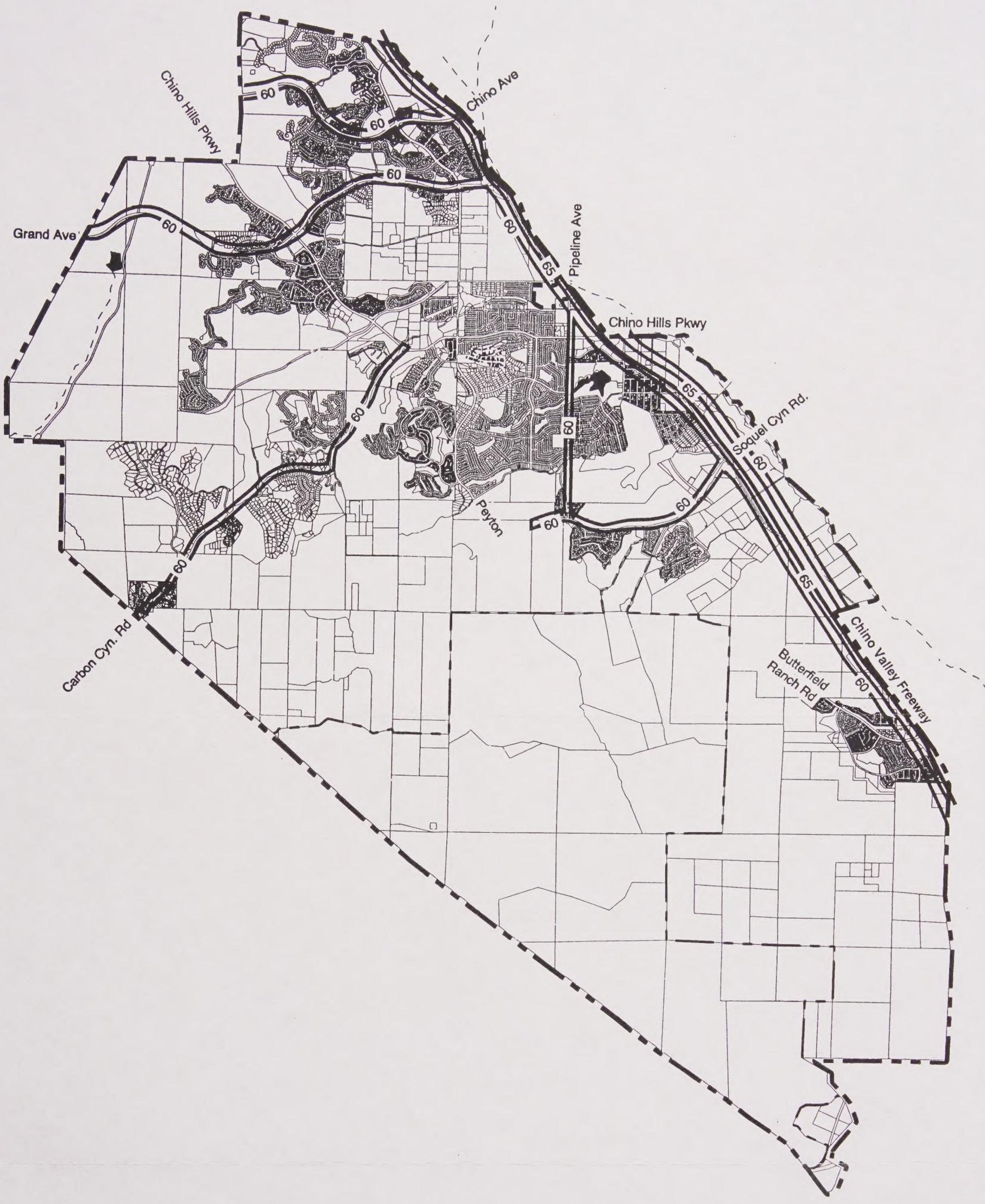
buildings, including air conditioning units, swimming pool pumps, fans, etc., can be a local noise problem if not properly shielded. Additional noise sources can also exist in residential neighborhoods: barking dogs, loud parties and/or amplified music, lawnmowers and leafblowers, use of pools or tennis courts and other activities. These noise events are generally annoying, but sporadic and short-term.

The city's Development Code contains standards to control stationary noise sources within the city.

Amplified Sound: The human voice can be a particularly annoying source of noise because people are conditioned to pay attention to the sound of a voice. Amplified sound can be more annoying than would be indicated simply by its noise level. The City's Noise Ordinance prohibits use of any radio receiving set, musical instrument, phonograph, or television set, which exceed the community's noise standards. The City's Noise Ordinance also requires special conditions for use of amplified sound on sound trucks, outdoor paging systems, automobile alarm systems, and any other uses that may interfere with other activities.

Construction Noise: Construction activity can be a source of noise in Chino Hills. Because construction is temporary in most locations, and because people recognize the high noise level of construction activity is necessary, most people do not consider construction noise a nuisance. However, construction during nighttime hours or without best efforts to minimize noise can cause significant annoyance. The City's Noise Ordinance restricts the hours of construction activity with high noise levels.

1993 Noise Environment: Noise contours represent lines of equal noise exposure, just as the contour lines on a topographic map are lines of equal elevation. The traffic noise contours for the City for existing 1992 conditions are shown in Figure N-1. The noise contours shown on the map are the 60 and 65 CNEL generated by freeway and local traffic.



SOURCE: Cotton/Beland/Associates, Inc.

↑ North
0 5000
scale in feet

Figure N-1
Existing Noise Environment

As shown in Figure N-1, some parcels, including residential uses, experience noise levels of 65 CNEL. This range of noise is conditionally acceptable for these uses (See Table N-2).

Future Noise Contours: To determine future noise levels throughout the community, General Plan land use information and anticipated future traffic volumes were entered into a community noise computerized model. Figure N-2 displays future CNEL noise contours for the City in the year 2010, assuming build-out of the City proceeds in accordance with General Plan land use policy. As shown, traffic-related noise is expected to increase throughout Chino Hills.

C. NOISE ELEMENT GOALS AND POLICIES

The following goals and supporting policies emphasize noise reduction through increased public and private awareness of noise sources, including mobile and stationary sources.

Major Goal 1

A High Quality of Life for All Residents

Focused Goal 1-1

A safe community free from man-made and natural hazards.

Policy 1-1

To the extent feasible, improve noise conditions in Chino Hills through the active, ongoing efforts of the City in coordination with other government agencies.

Policy 1-2

Increase public input on environmental noise issues, and establish a program for the monitoring and abatement of local noise sources.

Policy 1-3

Prohibit through truck traffic in noise-sensitive areas, such as school sites located in Chino Hills.

Policy 1-4

Minimize through vehicular traffic in the City's residential areas.

Policy 1-5

Utilize Transportation Demand Management measures (TDM) to decrease congestion along major roadways, and at major intersections. (See the Circulation Element Plan Section).

Policy 1-6:

Enforce State motor vehicle noise standards for cars, trucks, and motorcycles.

Policy 1-7

Incorporate sound attenuation measures in residential developments where outdoor ambient noise levels exceed 65 dB CNEL.

Policy 1-8

Incorporate ambient noise level considerations into land use decisions involving schools, hospitals, and similar noise sensitive uses.

Policy 1-9

Ensure all new developments provide adequate sound insulation or other protection from existing and projected noise sources.

Policy 1-10

Utilize the development approval process to ensure that buildings are sited and traffic circulation systems designed to minimize the impact of noise-generating activities on noise sensitive land uses.

Policy 1-11

Enforce standards that specify acceptable noise limits for various land uses throughout the City. Table N-1 shows criteria used to assess the compatibility of proposed land uses with the noise environment. These criteria are the bases of specific Noise Standards.

Policy 1-3
 The City of Chicago is committed to providing a safe and healthy environment for all its residents. This policy is designed to ensure that the City's actions are consistent with this commitment.

Policy 1-4
 The City of Chicago is committed to providing a safe and healthy environment for all its residents. This policy is designed to ensure that the City's actions are consistent with this commitment.

Policy 1-5
 The City of Chicago is committed to providing a safe and healthy environment for all its residents. This policy is designed to ensure that the City's actions are consistent with this commitment.

Policy 1-6
 The City of Chicago is committed to providing a safe and healthy environment for all its residents. This policy is designed to ensure that the City's actions are consistent with this commitment.

Policy 1-7
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Policy 1-8
 The City of Chicago is committed to providing a safe and healthy environment for all its residents. This policy is designed to ensure that the City's actions are consistent with this commitment.

Policy 1-9
 The City of Chicago is committed to providing a safe and healthy environment for all its residents. This policy is designed to ensure that the City's actions are consistent with this commitment.

Policy 1-10
 The City of Chicago is committed to providing a safe and healthy environment for all its residents. This policy is designed to ensure that the City's actions are consistent with this commitment.

Policy 1-11
 The City of Chicago is committed to providing a safe and healthy environment for all its residents. This policy is designed to ensure that the City's actions are consistent with this commitment.

As shown in Figure 1-1, the City's actions are consistent with this commitment. This policy is designed to ensure that the City's actions are consistent with this commitment.

Policy 1-12
 The City of Chicago is committed to providing a safe and healthy environment for all its residents. This policy is designed to ensure that the City's actions are consistent with this commitment.

C. HOUSING ELEMENT GOALS AND POLICIES

The following goals and policies are designed to ensure that the City's actions are consistent with this commitment. This policy is designed to ensure that the City's actions are consistent with this commitment.

Policy Goal 1
 A High Quality of Life for All Residents

Policy Goal 2
 A Safe and Healthy Environment for All Residents

Policy 2-1
 The City of Chicago is committed to providing a safe and healthy environment for all its residents. This policy is designed to ensure that the City's actions are consistent with this commitment.

Policy 2-2
 The City of Chicago is committed to providing a safe and healthy environment for all its residents. This policy is designed to ensure that the City's actions are consistent with this commitment.



SOURCE: Leighton and Associates, Inc.

↑ North
0 5000
scale in feet

Figure N-2
Future Noise Environment



Chapter 8 Economic Development Element

A. INTRODUCTION

The Economic Development Element adopts the City's primary vision, stated in the mission and vision statement, of a diversified economic base. The vision statement lists the the City is the most self-sufficient a full range of small, medium, large and employment for its residents and to provide a stable economic base for the City. This vision states that the purpose of public works in the field and regional economy.

B. ECONOMIC DEVELOPMENT ISSUES

The efforts of local, state, and federal government, as well as the private sector, have been successful in the past. The City's economic base is strong, and the Economic Development Element seeks to continue this success. The following issues are identified as the economic development issues faced by the City. Following the vision is a list of the issues that provide the goals, objectives and actions to deal with these issues.

Shopping and Service

- Levels of shopping and service that are appropriate to the City's character, that will meet the needs of the residents and that can be supported by the local and regional economy.
- Increased levels of retail, restaurant and entertainment opportunities.
- Attracting new investment in retail, while the existing market is subject to change.
- Sustainable growth in retail and service sectors across the City.

Base Businesses and Employment Creation

- Increase the ability to attract and retain base businesses.
- Increase employment opportunities for all residents, including those who are unemployed at the moment of need.
- Increase levels of City, working conditions and employee groups.

Expanded and Diversified City Revenue

- Diversified revenue base that allows the City to meet its needs without being dependent on a single revenue source.
- Manage growth to ensure that revenue is distributed to maintain local health.

C. GOALS, OBJECTIVES AND PRIORITIES

Economic Development Element

- Increase the level of retail and service in the City center.
- Increase the level of investment in the city and across the City.
- Attract growth in a manner that promotes "sustainable" economic development while promoting social and environmental goals.
- Increase the City's financial stability of the City.

In this section, each major goal is supported by more detailed "action goals." Included

Economic Development
Element

Chapter 8 Economic Development Element

A. INTRODUCTION

The Economic Development Element defines the City's primary policies related to the creation and maintenance of a diversified economic base. The ideal economic base for the City is that which (1) provides a full range of retail shopping, services and employment for its residents and (2) provides a stable tax revenue structure for the City that will shield it from the impacts of cyclical trends in the local and regional economy.

B. ECONOMIC DEVELOPMENT ISSUES

The citizens of Chino Hills articulated the issues addressed in the General Plan (see Appendix A, Summary of 1993 General Plan Survey), and the Economic Development Elements takes its direction from those concerns. The following outline summarizes the economic development issues faced by the City. Following the outline is a section of the Element that provides the goals, objectives and policies to deal with these issues.

Shopping and Service Opportunities

- Levels of shopping and services that are appropriate to the City's character, that will meet the needs of the residents and that can be supported by the local and regional economy
- Enhanced levels of retail, restaurant and entertainment opportunities
- Appropriate new development in areas where the necessary market support is available
- Sustainable growth in retail and service market sectors throughout the City

New Businesses and Employment Creation

- Provide the ability to live, work, and shop within the City
- New employment opportunities for all residents with industries that are appropriate to the character of Chino Hills
- Positive image of City among businesses and industry groups

Increased and Diversified City Revenues

- Diversified economic base that shields the City from drops in revenue caused by cyclical economic trends
- Managed growth approach to new development designed to maintain fiscal health

C. GOALS, OBJECTIVES AND POLICIES

The overall direction for economic development policy can be summarized as follows:

- Enhance the shopping, service, entertainment and employment opportunities for City residents;
- Increase the ability of residents to live and work within the City; and
- Manage growth in a manner that maximizes "sustainable" economic opportunities while promoting sound fiscal policies.
- Ensure the long-term fiscal viability of the City.

In this section, each major goal is supplemented by more detailed "focused goals." Focused

goals are followed by "objectives" which identify actions and, where appropriate quantifiable standards applied to goal statements. The goals and objectives are achieved by implementing "policies" which describe how the goals and objectives may be achieved. This hierarchy of statements illustrates the process of refining a general idea into a specific action.

Major Goal 3

Diversified Economic Base

Focused Goal 3-1

Commercial and service uses targeted to serve Chino Hills residents and shoppers from other areas

Focused Goal 3-2

Increased opportunities to live, work, and shop in Chino Hills

Focused Goal 3-3

Diverse economic activities that limit risk to the City from revenue shortfalls caused by cyclical economic trends in any one sector

Focused Goal 3-4

Fiscal policies coordinated with managed growth to ensure the fiscal health of the City

Objective 3-1

Promote and maintain levels of shopping, services and entertainment that are appropriate to meet the market demand discussed in Section D of this Element.

Objective 3-2

Increase sales tax revenue by encouraging all types of retail development (neighborhood, community, and regional) and higher sales per square foot, as discussed in Section D of this Element.

Objective 3-3

Develop guidelines for future development that promote neighborhood-based retail and service land uses in areas currently underserved by those uses.

Objective 3-4

Increase net revenues by encouraging commercial/office and industrial as discussed in Section D of this Element.

Policy 3-1

Create a broad range of employment opportunities for Chino Hills residents which are compatible with the community's low density residential character and the skills and education of Chino Hills' workforce.

Policy 3-2

Concentrate major business park and commercial uses, which represent a potential employment base, near the Highway 71 corridor.

Policy 3-3

All large region-serving commercial uses shall be located adjacent to the State Highway 71 corridor.

Policy 3-4

Pursue the location of corporate headquarters in the community, and evaluate the potential development of a conference center.

Policy 3-5

Seek to expand commercial activity in the City by emphasizing retail stores which serve regional, rather than purely local needs.

Policy 3-6

Work with local agencies and jurisdictions to promote employment growth coordinated with the availability of adequate housing and transportation.

Policy 3-7

Ensure the development of aesthetically attractive and balanced commercial sector compatible with the community and recognizing the predominantly residential character of Chino Hills.

Policy 3-8

Child care/day care centers are encouraged in proximity to employment centers and residential areas (e.g., as part of commercial centers, residential developments and office/business park developments).

Policy 3-9

Periodically update the projections contained in Section D of this Element to adjust future

development needs to meet emerging demographic trends.

Policy 3-10

Pursue commercial/office uses that can take full advantage of Chino Hill's locational assets along S.R. 71, its residential markets and its skilled labor pool.

Policy 3-11

Decrease nonresidential development's proportionate share of landscape and lighting assessments by allocating park and open space maintenance costs solely to residential development.

Policy 3-12

Review development fees annually to ensure appropriate relationship between fees and services.

D. SUMMARY OF ECONOMIC AND MARKET ASSESSMENT

1. Forecast of Commercial-Retail Absorption

Absorption refers to the amount of new development a particular area can financially support. This is a function of consumer buying power which, in turn, is a function of population, personal income and spending patterns. Based on the projections of consumer demand in the local market and the current deficit of retail development based on local demand, the following retail absorption forecast has been calculated. Assuming a 0.3 Floor Area Ratio (FAR) for all retail development, current demand patterns will fuel an absorption of approximately 125 additional acres of new retail development (in addition to the existing 93 acres) between 1993 and 2013. The retail absorption forecast is summarized below. It is very likely that some of the demand for retail space will be met by development outside the City limits, but within close proximity. For example, a regional shopping center is more likely to be built just outside the City limits.

While it is difficult to precisely predict the breakdown of local retail absorption by community-oriented and regionally-oriented development, due to Chino Hills' location relative to the regional market area it is likely that nearly all demand for community-oriented development will be absorbed within the City while only a portion of regionally-oriented development will occur in Chino Hills. Based on an analysis of the demand for retail goods by Chino Hills residents, it appears that the potential future absorption of retail development in Chino Hills could be roughly 65% community-oriented and 35% regionally-oriented. For purposes of estimating absorption and employment changes, we have assumed a 70% capture rate of development within the City by the year 2013. The capture rate increases over time to 70% because of the retail supply awaiting the completion of the housing ("rooftops").

Based on an assumed mix of community-oriented and regionally-oriented development, Chino Hills could expect the following types of stores being developed in the future. Community retail centers are usually less than 100,000 square feet in size and typically serve populations of 10,000 or less. They are anchored by grocery stores and drug stores and may also house dry cleaners, bank branches, gift shops, small offices like realtors, small food service stores, etc. Regional (or subregional) retail centers are usually 150,000 to 250,000 square feet in size and typically serve populations of 30,000 to 50,000. They are typically anchored by two or more national and/or regional chains that sell comparison goods (those products that consumers will shop for based on price, quality, etc.).

Regional center anchors primarily sell apparel, furnishings, consumer electronics, and other large ticket items. Examples of these stores include department stores, specialty stores such as Circuit City, home improvement stores such as Home Depot, and discount stores such as Wal-Mart and Target. In addition to the anchors, regional centers may also house smaller anchor stores such as Marshall's or Ross; full-service supermarkets

which offer deli, butcher, seafood, drug and bakery departments, multi-screen movie theaters, small specialty apparel shops, full-service and fast food restaurant; offices; auto service centers, sporting goods stores; and other shops that draw comparison shoppers or provide services. Regional centers may be open-air or enclosed malls and are typically located at the intersection of two major arterial streets or highways. Power centers, which house several "big box" retailers, are considered regional or sometimes super-regional centers.

Other types of regionally-oriented commercial-retail development which may be supported in the Chino Hills market area include automobile dealerships, recreation/sports facilities such as golf courses, tennis clubs, athletic clubs, water parks, small amusement parks, etc, hotels and/or resort hotels. Although the current economic climate and financing trends make such development difficult, there are some specific uses which appear to be in current demand. These include a multi-screen movie complex, auto repair facilities, and full service restaurants.

2. Forecast of Commercial-Office Absorption

Absorption of commercial-office development in Chino Hills is based on regional growth in specified employment sectors and absorption of existing, vacant office development. An analysis of the regional office market completed by Empire Economics in 1991 indicated that a one and one-half year supply of office space existed. Vacancies have increased somewhat in a number of buildings, some of these buildings are likely to be taken out of the market, retrofitted for other uses, or remain vacant for the foreseeable future, even at lower rents. Given this, we assume that approximately a one and one-half year supply existed as of March, 1993. Further, because the Route 71 expansion is not projected to be completed until late 1996, Chino Hills is at a competitive disadvantage and it is unlikely that any significant new office development will occur in the City until the freeway is completed. Therefore, the peak local capture

rate (12.5% of new regional office demand) will probably not occur until after 1998. Until then, a 5% capture rate is projected, representing 16 acres of office land in the City by 1998. Single tenant users "attracted" to Chino Hills could increase this amount.

Based on the office employment sector growth and the factors summarized above, the office absorption forecast for the City of Chino Hills between 1993 and 2013 is approximately 180 acres. This forecast is detailed in the market analysis report prepared for the General Plan.

3. Forecast of Industrial Absorption

Absorption of industrial development in Chino Hills is based on regional growth in specified employment sectors and absorption of existing, vacant industrial development. An analysis of the regional industrial market completed by Empire Economics indicated that nearly a five year supply of industrial space existed regionally in 1991. Very little new industrial development has occurred in the regional market over the past two years. Although vacancies have increased slightly, some buildings are now out of the market because of the lower demand and the building's obsolescence. Therefore we have assumed an approximate supply of five years to exist as of March, 1993. Further, Chino Hills will be at a competitive disadvantage because the Route 71 expansion is not projected to be completed until late 1996. It is unlikely that any significant new industrial development could be supported in the City until the freeway is completed. Therefore, the peak local capture rate (15.0% of new regional industrial demand) will probably not occur until after 1998. Prior to then, the estimate of a 5% capture rate for the City reflects a net increase of slightly over 1 acre. A single user who is "attracted" to the City would increase this acreage demand.

Based on the industrial employment sector growth and the factors discussed above, the industrial absorption forecast for the City of Chino Hills between 1993 and 2013 is approximately 200 acres. This forecast is de-

tailed in the market analysis report prepared for the General Plan.

4. Employment Growth

Based on the absorption forecasts for nonresidential development discussed previously, it is possible to estimate future levels of local permanent employment. The absorption of each nonresidential development category drives the average employee per acre and square feet per employee standards established by industry sources such as the Urban Land Institute. The square footage per employee could vary depending on the nature of the retailer (full service or discount, comm/office (back office or traditional), and industrial (light assembly or warehouse). The table on the following page presents the estimate of employment growth based on that information. The cumulative total employment presented in the table is based on the assumption that demand generated within Chino Hills is not supplied by adjacent development outside of the city limits. As stated earlier, some of the retail demand will be provided outside the City limits.

Appendices

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Appendices

Appendix A: Glossary

Access - Regulations defining street/fire lane width, proximity to hydrants and buildings, and contingency routes necessary to efficiently access and fight fire with fire personnel and equipment.

Acre-foot - An acre-foot is the volume of an acre of area that is one foot in thickness. Used to define the capacity of a reservoir or lake. One acre-foot contains approximately 326,000 gallons, enough to serve a family of three for one year.

Active fault - For implementation of Alquist-Priolo Special Studies Zone (APSSZ) requirements, an active fault is one that shows evidence of, or is suspected of having experienced, surface displacement within the last 11,000 years. APSSZ classification is designed for land use management of surface rupture hazards. A more general definition (National Academy of Science, 1988), states "a fault that on the basis of historical, seismological, or geological evidence has the finite probability of producing an earthquake." (See "Potentially active fault").

Acutely toxic - Having the ability to cause injury, illness or damage to humans, animals, or other living organisms by a single exposure of a duration measured in seconds, minutes, hours or days, or in the case of oral ingestion, by a single dose.

Aftershocks - Minor earthquakes following a greater one and originating at or near the same place.

Alluvium - Surficial sediments of poorly consolidated gravels, sand, silts, and clays deposited by flowing water.

Bedding - The arrangement of a sedimentary rock in beds or layers of varying thickness and character.

Bedrock - Designates hard rock that is in its natural intact position and underlies soil or other unconsolidated surficial material.

Bench - A grading term that refers to a relatively level step excavated into earth material on which fill is to be placed.

Blind thrust fault - A thrust fault is a low-angle reverse fault (top block pushed over bottom block). A "blind" thrust fault refers to one that does not reach the surface.

Bioaccumulative - A toxic substance that concentrates on living organisms through direct assimilation or food chain accumulation.

Branding - The wind transport of burning debris outward from a fire. Debris can be carried a mile or more ahead of a fire.

Business plan - A State-mandated document that all businesses that handle hazardous materials need to file with their local Fire District and with the Department of Environmental Health. The business plan should contain an inventory of the substances stored, handled and/or generated, the quantities used, a site map that shows where these substances are stored and handled, and where emergency response equipment is located. Evacuation plans and procedures, and telephone numbers of key emergency response personnel, are also part of the business plan.

Carcinogenic - Capable of producing cancer.

Chronically toxic - Having the ability to cause injury, illness, or damage to humans, animals, or other living organisms by prolonged or repeated exposure or consumption over a period of days, weeks, months, or years.

Clay - A rock or mineral fragment having a diameter less than 1/256 mm (4 microns, or 0.00016 in.). A clay commonly applied to any soft, adhesive, fine-grained deposit.

Claystone - An indurated clay having the texture and composition of shale, but lacking its fine lamination. A massive mudstone in which clay predominates over silt.

Conglomerate - A coarse-grained sedimentary rock composed of rounded to subangular fragments larger than 2 mm in diameter set in a fine-grained matrix of sand or silt, and commonly cemented by calcium carbonate, iron oxide, silica, or hardened clay. The consolidated equivalent of gravel.

Consolidation - Any process whereby loosely aggregated, soft earth materials become firm and cohesive rock. Also, the gradual reduction in volume and increase in density of a soil mass in response to increased load or effective compressive stress, such as the squeezing of fluids from pore spaces.

Cornice - A horizontal molded projection that crowns or completes a building or wall. These nonstructural elements are often damaged during an earthquake.

Corrosive - Having the ability to destroy living tissue or steel surfaces by chemical action. This definition refers to hazardous substances.

Coseismic rupture - Ground rupture occurring during an earthquake but not necessarily on the causative fault.

Crest of a dam - The top of the dam.

Critical facilities - The definition of critical facilities in the glossary of the Safety Element takes precedent. The following are categories of critical facilities referenced in the Safety Element.

- a. Any lifeline system facility whose operations are essential at times of emergencies, such as energy transmission systems, major utility lines, evacuation and disaster routes, and warehouses storing heavy rescue and debris cleanup equipment;
- b. essential facilities that are needed in times of emergencies, such as medical

facilities, fire and police stations, emergency operation centers, and communication centers;

- c. high-risk facilities that, if severely damaged, could cause catastrophic casualties or disasters far beyond the facility itself, such as nuclear power plants, dams and flood control infrastructure, freeway to freeway interchanges and bridges, and industrial plants which manufacture or store explosives, toxic materials, or petroleum products;
- d. high occupancy facilities having potential for catastrophic fatalities and crowd control problems, such as high-rise buildings, large assembly public and private facilities, and large multifamily residential complexes;
- e. dependent care facilities that house populations with special evacuation considerations, such as educational facilities for preschool, public and private schools, rehabilitation centers, prisons, and major social care facilities, including group care homes and elderly care facilities; and
- f. economic facilities whose continued operation is paramount to avoiding severe economic impact, such as banking, vital record keeping, archiving activities, airport and seaport facilities, and large industrial/commercial complexes.

Dam - A barrier constructed across a waterway to control the flow or raise the level of water. Sometimes the term is also applied to the body of water controlled by such a barrier.

Debris flow - A saturated, rapidly moving saturated earth flow with 50 percent rock fragments coarser than 2 mm in size which can occur on natural and graded slopes.

Deflected canyons - A relatively spontaneous diversion in the trend of a stream or canyon caused by any number of processes, including folding and faulting.

Deformation - A general term for the process of folding, faulting, shearing, compression, or extension of rocks.

Diaphragm - A structural partition or division, such as between floors, or forming the walls between rooms.

Differential settlement - Nonuniform settlement; the uneven lowering of different parts of an engineered structure, often resulting in damage to the structure. Sometimes included with liquefaction as ground failure phenomenon.

Dynamic analysis - A complex earthquake-resistant engineering design technique (UBC - used for critical facilities) capable of modeling the entire frequency spectra, or composition, of ground motion. The method is used to evaluate the stability of a site or structure by considering the motion from any source or mass, such as that dynamic motion produced by machinery or a seismic event.

Earth flow - Imperceptibly slow-moving surficial material in which 80 percent or more of the fragments are smaller than 2 mm, including a range of rock and mineral fragments.

Earthquake - Vibratory motion beginning within the earth or along its surface caused by the abrupt release of strain from elastically deformed rock by displacement along a fault.

Earth's crust - The outermost layer or shell of the Earth.

Emergency Operations Center (EOC) - A room or building equipped and staffed to monitor and direct the response to an emergency situation.

Engineering geologist - A geologist who is certified by the State as qualified to apply geologic data, principles, and interpretation to naturally occurring earth materials so that geologic factors affecting planning, design, construction, and maintenance of civil engineering works are properly recognized and used. An engineering geologist is particularly

needed to conduct investigations, often with geotechnical engineers, of sites with potential ground failure hazards.

Epicenter - The point at the Earth's surface directly above where an earthquake originated.

Expansive soil - A soil that contains clay minerals that take in water and expand. If a soil contains sufficient amount of these clay minerals, the volume of the soil can change significantly with changes in moisture, with resultant structural damage to structures founded on these materials.

Fault - A fracture (rupture) or a zone of fractures along which there has been displacement of adjacent earth material.

Fault segment - A continuous portion of a fault zone that is likely to rupture along its entire length during an earthquake.

Fault slip rate - The average long-term movement of a fault (measured in cm/year) as determined from geologic evidence.

Fire flow - Regulations governing delivery rates of water (gallons/minute) that are necessary to adequately halt and reverse the spread of fire.

Flood - A rising body of water, such as a stream or lake, that overtops its natural and artificial confines and covers land not normally under water.

Geomorphology - The science that treats the general configuration of the Earth's surface. The study of the classification, description, nature, origin, and development of landforms, and the history of geologic changes as recorded by these surface features.

Geotechnical engineer - A licensed civil engineer who is also certified by the State as qualified for the investigation and engineering evaluation of earth materials and their interaction with earth retention systems, structural foundations, and other civil engineering works.

Grading - Any excavating or filling or combination thereof. Generally refers to the modification of the natural landscape into pads suitable as foundations for structures.

Ground failure - Permanent ground displacement produced by fault rupture, differential settlement, liquefaction, or slope failure.

Ground rupture - Displacement of the earth's surface as a result of fault movement associated with an earthquake.

Hazardous material - A substance that poses a present or potential danger to human beings or other organisms because it is toxic, flammable, radioactive, explosive, or has some other property that produces substantial risk to life.

Hydrocompaction - Settlement of loose, granular soils that occurs when the loose, dry structure of the sand grains held together by a clay binder or other cementing agent collapses upon the introduction of water.

Ignitable/flammable - Capable of being set afire, or of bursting into flame spontaneously or by interaction with another substance or material, and/or capable of burning with great rapidity.

Intensity - A measure of the effects of an earthquake at a particular place. Intensity depends on the earthquake magnitude, distance from the epicenter, and on the local geology.

Landslide - A general term covering a wide variety of mass-movement landforms and processes involving the downslope transport, under gravitational influence, of soil and rock material en masse.

Lateral force - The force of the horizontal side to side motion on the earth's surface as measured on a particular mass, either a building or structure.

Lateral spreading - Lateral movement in a fractured mass of rock or soil which results

from liquefaction or plastic flow of subjacent materials.

Lifeline system - Linear conduits or corridors for the delivery of services or movement of people and information (e.g., pipelines, telephones, freeways, railroads)

Liquefaction - Changing of soils (unconsolidated alluvium) from a solid state to weaker state, unable to support structures, where the material behaves similar to a liquid as a consequence of earthquake shaking. The transformation of cohesionless soils from a solid or liquid state as a result of increased pore pressure and reduced effective stress.

Magnitude - A measure of the size of an earthquake as determined by measurements from seismograph records.

Major earthquake - Capable of widespread, heavy damage up to 50+ miles from the epicenter; generally near Magnitude Range 6.5 to 7.0 or greater, but can be less, depending on rupture mechanism, depth of earthquake, location relative to urban centers, etc.

Maximum Credible Earthquake (MCE) - The highest magnitude earthquake a fault is capable of producing based on physical limitations, such as the length of the fault or fault segment.

Maximum Probable Earthquake (MPE) - The design size of the earthquake expected to occur within a time frame of interest, for example within 30 years or 100 years, depending on the purpose, lifetime, or importance of the facility. Magnitude/frequency relationships are based on historic seismicity, fault slip rates, or mathematical models. The more critical the facility, the longer the time period considered.

Moderate earthquake - Capable of causing considerable to severe damage, generally in the range of Magnitude 5.0 to 6.0 (Modified Mercalli Intensity <VI), but highly dependent on rupture mechanism, depth of earthquake, location relative to urban center, etc.

Montmorillonite - A group of expanding clay minerals subject to swelling on wetting (and shrinking on drying) due to introduction of considerable interlayer water.

Mud flow - Water-saturated earth flow containing 50 percent fragments smaller than 2 mm.

Near-field earthquake - Used to describe a local earthquake within approximately a few fault zone widths of the causative fault which is characterized by high frequency waveforms that are destructive to aboveground utilities and structures less than about two or three stories in height.

Offset ridge - A ridge that is discontinuous on account of faulting.

Offset stream - A stream displaced laterally or vertically by faulting.

Ordnance - Military weapons, along with the ammunition and the equipment to keep them in good condition.

Parapet - The portion of any wall which extends above the roof line, or a wall that serves as a guard at the edge of a balcony or roof.

Peak Ground Acceleration (PGA) - The greatest amplitude of acceleration measured for a single frequency on an earthquake accelerogram. The maximum horizontal ground motion generated by an earthquake. The measure of this motion is the acceleration of gravity (equal to 32 feet per second squared, or 980 centimeters per second squared), and generally expressed as a percentage of gravity.

Perched groundwater - Unconfined groundwater separated from an underlying main body of groundwater by an unsaturated zone.

Persistent in the environment - Toxic substance that resists natural degradation or detoxification.

Piling - Used to pin a structure to stable bedrock below using long piles emplaced through

an unstable zone of potential ground failure; commonly utilized for landslide and liquefaction mitigation.

Peak flood - The highest discharge or stage value of a flood.

Pore pressure - The stress transmitted by the fluid that fills the voids between particles of a soil or rock mass.

Potentially active fault - A fault showing evidence of movement within the last 1.6 million years (750,000 years according to the U.S. Geological Survey) but before about 11,000 years ago, and that is capable of generating damaging earthquakes.

Project - A development application involving zone changes, variances, conditional use permits, tentative parcel maps, tentative tract maps, or plan amendments.

Reactive - Having properties of explosivity or of chemical activity which can be a hazard to human health or the environment.

Relict Soil - Soil that has been at the surface since it was first formed.

Resonance - Amplification of ground motion frequencies within bands matching the natural frequency of a structure and often causing partial or complete structural collapse; effects may demonstrate minor damage to single-story residential structures while adjacent 3- or 4-story buildings may collapse because of corresponding frequencies, or vice versa.

Response spectra - The range of potentially damaging frequencies of a given earthquake applied to a specific site and for a particular building or structure.

Sand boil - An accumulation of sand resembling a miniature volcano or low volcanic mound produced by the expulsion of liquefied sand to the surface. Also called sand blows and sand volcanoes.

Sandstone - A medium-grained clastic sedimentary rock composed of abundant rounded

or angular fragments of sand size set in a fine-grained matrix and more or less firmly united by a cementing material.

Saturated - Said of the condition in which the interstices of a material are filled with a liquid, usually water.

Sediment - Solid fragmental material that originates from weathering of rocks and is transported or deposited by air, water, ice, or that accumulates by other natural agents, such as chemical precipitation from solution, and that forms in layers on the Earth's surface in a loose, unconsolidated form.

Seiche - A free or standing-wave oscillation of the surface of water in an enclosed or semi-enclosed basin (such as a lake, bay, or harbor) that is initiated chiefly by local changes in atmospheric pressure, aided by winds, tidal currents, and earthquakes, and that continues, pendulum-fashion, for a time after cessation of the originating force.

Seismogenic - Capable of producing earthquake activity.

Seismograph - An instrument that detects, magnifies, and records vibrations of the Earth, especially earthquakes. The resulting record is a seismogram.

Silt - A rock fragment or detrital particle smaller than a very fine sand grain and larger than coarse clay, having a diameter in the range of 1/256 to 1/16 mm (4-62 microns, or 0.00016-0.0025 in.). An indurated silt having the texture and composition of shale but lacking its fine lamination is called a siltstone.

Slope ratio - Refers to the angle or gradient of a slope as the ratio of horizontal units to vertical units. For example, in a 2:1 slope, for every two horizontal units, there is a vertical rise of one unit (equal to a slope angle, from the horizontal, of 26.6 degrees).

Slump - A landslide characterized by a shearing and rotary movement of a generally independent mass of rock or Earth along a curved slip surface.

Soft-story construction - A structure that has at least one story, often the ground level, with significantly less rigidity or strength than other floors in the structure (such as apartment dwellings with garages on the lower floor). These types of buildings may not perform well during seismic loading.

Storage capacity - Dam storage measured in acre-feet or cubic decameters (.8107 cubic decameter equals 1 acre-foot), including the area not filled with water.

Strike-slip fault - A fault with a vertical to subvertical fault surface that displays evidence of horizontal and opposite displacement.

Structural engineer - A licensed civil engineer certified by the State as qualified to design and supervise the construction of engineered structures.

Subsidence - The sudden sinking or gradual downward settling of the Earth's surface with little or no horizontal motion.

Tilt-up wall - A poured concrete and steel-reinforced wall raised or lifted into place and tied to other walls and to the roof and floor.

Toxic - Capable of producing injury, illness, or damage to humans, domestic livestock, or wildlife through ingestion, inhalation, or absorption through any body surface.

Unconsolidated sediments - A deposit that is loosely arranged or unstratified, or whose particles are not cemented together, occurring either at the surface or at depth.

Veneer - A covering layer of material for walls, which is attached to the wall, but not bonded adequately so as to act with it during earthquake shaking.

Watershed - A topographically defined region draining into a particular water course.

Water table - The upper surface of groundwater saturation of pores and fractures in rock or surficial earth materials.

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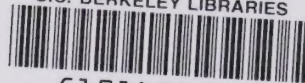
Policy 1-12

Enforce the provisions of the State of California Uniform Building Code, which specifies that the indoor noise levels for multi-family residential living spaces not exceed 45 dB CNEL due to the combined effect of all noise sources. The State requires implementation of this standard when the outdoor noise levels exceed 60 dB CNEL. The Noise Referral Zones (the 60 dB CNEL contour) can be used to determine when this standard needs to be addressed. The Code requires that this standard be applied to all new hotels, motels, apartment houses and dwellings other than detached single-family dwellings. The City will also, as a matter of policy, apply this standard to single family dwellings.

Policy 1-13

Ensure that equipment, machinery, fan, and air conditioning noise does not exceed specified levels, established in the City's Noise Ordinance.

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